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SEPTEMBER 3, 1949



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WEEK AT A GLANCE

EASY DOES IT: Crash landings aren't to be recommended in any branch of transportation activity, not even—despite the evidence of one's ears—in switching freight cars. The Monon's president had something to say recently, in a talk in Chicago (page 68), about the attitude that seems to prevail among some employees that damage to lading produced by excessive speed in coupling cars is just something that has to be endured. He suggests some cures for this affliction.

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RALPH BUDD DAY: There was something exceptional in the way of ceremony this week on the grounds of the Chicago Railroad Fair, as was proper in view of the unusual record of individual achievement to which tribute was being paid. After 30 years as president of important railroads—the Great Northern and the Burlington—Ralph Budd has stepped aside for a younger man. Aside, not down, for he has undertaken a new assignment, that of chief officer of the agency operating Chicago's urban transportation system, about which it is more than difficult to discover any of the elements of a sinecure. Our leading feature article this week (page 46) is a review of the career of the dean of railway executives and an appraisal of the qualities that have characterized his work.

SATURDAYS OFF: When the railroads' non-operating employees went to work last Thursday they inaugurated the 40-hour week's application to an industry that has to perform many of its most important functions continuously through a 168-hour week. So far as the railroads' customers are concerned the most noticeable difference in that performance attributable to the shortened work week is the closing on Saturdays of most "uptown" city ticket offices and a great many small-town passenger stations and freighthouses. The plans in this respect of a representative list of roads are outlined in the article on page 58.

CLERKS' WORK CURTAILED: Behind the scenes, so far as the public is concerned, an equally important adjustment is being made in the procedures of railroad accounting. This is a long-range development accelerated by the institution of the 40-hour week, both in the application of more and better machines to replace manual operations and in the revision of methods and forms to reduce the complexity—and expense—of clerical activities. The current situation in this field is summarized in the illustrated article on page 56.

MAINTENANCE ADJUSTMENTS: Ways and means of adapting the limitations of the shorter work week to the requirements of the railroads' roadway maintenance activities are described in another article this week (page 52). Outstanding among the adjustments scheduled by the main-

tenance officers of a group of representative railroads are two: greater mechanization of maintenance work and closer coordination of such work with train operations to reduce man-hour-costly interruptions.

ARMY RAILROADING: In the article on page 65 Colonel Harry E. Owens describes the organization by which the Transportation Corps keeps in good running order its peacetime railroad equipment fleet of 3,000 tank cars, 4,500 other cars, 300 locomotive cranes, and 650 locomotives (of which 90 per cent are Diesels).

WHICH LOCOMOTIVE IS BEST?: So far as Diesels are concerned, there are ways to obtain the right answer to that question, and one is set forth in the article by G. T. Bevan of General Electric which appears this week on page 61. Given a set of conditions, economic and physical, a few simple rules can be applied to determine what size and type locomotive will do the work most efficiently.

40,000 SALESMEN: That is what the Missouri Pacific is striving to create by getting every employee interested in actively promoting business for its freight and passenger departments. The methods by which this program is being put into effect are reported briefly on page 70.

A DEBT UNPAID: Back in the times when real money was being made from the construction and operation of railroads those who acquired fortunes in that way were generous in contributing to the support of scientific research and creative intellectual activity. The railroads, however, as our leading editorial observes, have derived very little advantage from these benefactions, and now the industry's capacity to compensate investors has so ebbed that a terrific effort in popular education in the fundamentals of transportation economics must be put forth if it is to contribute any more to the fortunes of potential philanthropists. An exceptional opportunity exists for privately financed educational or research institutions to support such an effort, and in so doing to repay the debt these institutions owe to the past generosity of people who profited from railroads.

A HOT SUBJECT: Still a matter of major concern in train operation, satisfactory journal-box performance is a result of a complex chain of conditions and events. Considerations to be faced in finding practical and economical ways to get rid of hot boxes—"the great and traditional curses of the industry" (as the New York Central's president labels them)—are the subject of editorial comment this week.



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An Opening for a Discerning Philanthropist

Over the past half-century a substantial part of the fortunes which have been accumulated in the railroad business, and in manufacturing railway equipment, has been bequeathed in one way or another to the advancement of education and scientific research. With the exception, however, of two or three endowed professorships of transportation, few bequests of funds derived from the railroad industry have found their way into endowments with the primary objective of fostering education and research into the complex and baffling problems of transportation economics, and the political and human relations of the railroad industry. Yet these are the places where the most difficult problems of the railroad industry lie; and failure to get solutions to them has put the railroads in a position where they are no longer earning any fortunes worth mentioning for potential benefactors of education and research. It looks as if the philanthropists have been a little like the energetic clubwoman-so full of uplift ideas for other people's kids that she forgot she had any of her own to look after.

There is hardly a privately financed educational institution in the country which has not, at some time or another, benefited from substantial philanthropies at the hands of benefactors whose resources were largely derived from their railroad investments. One of the nation's great universities was founded by, and bears the family name of, a leading railroad

builder. Technological education and research have been particularly favored by bequests from benefactors identified with the railroad industry — a large one in this category having gone in recent years, as will be recalled, to a midwestern university. The railroads, it is true, derive some measure of advantage from these broad philanthropies — to the extent that improved training of technicians and provision for instructing a larger number of them are a benefit to all industries which employ such assistance.

Intangible Handicaps

Meantime, however, the railroads have languished as a profitable enterprise; and hence have failed to attract new capital in the volume which is desirable and necessary for the protection of the public interest in adequate railroad service. The reason lies in popular ignorance and political ineptitude—handicaps which cannot be blamed upon a shortage of facilities for technological education and research; nor upon a lack of sufficient dormitories for college students; nor upon poorly supplied libraries; nor indeed upon any of the other inadequacies in facilities for education, to the correction of which bequests derived mainly from the railroad industry, directly or indirectly, have been largely devoted.

The anemia in railroad profitability has come largely from the fumbling inconsistency with which

the railroads have been regulated; from improvident political policies which have diverted from them a large traffic which they can still move more economically than any other transport agency; and from hit-or-miss methods in railroad public and employee relations to which much of the railroads' suffering at the hands of politicians, regulators and labor

leaders must be charged.

The development of these crippling influences is far advanced, and it cannot be expected that random, piecemeal and faint-hearted corrective measures are going to remove them. On the other hand, the conclusion that they cannot be corrected would be equivalent to a conclusion that free people do not have sense enough to solve their economic and political problems. If an industry as urgently required in the public interest as the railways cannot be restored to economic health under the American form of government and the American concept of free enterprise, then both our form of government and our economic organization will stand before the bar of history condemned to death as failures. No American not directly or indirectly under the influence of the country's enemies can admit such failure-so the only alternative is to labor away confidently and persistently at discerning the nature of the handicaps which afflict the railroads and in applying the necessary corrective measures.

An Opportunity for an "Angel"

Such corrective measures will not and cannot be formulated and applied in the absence of a large improvement, both qualitatively and quantitatively, in popular education in the fundamentals of transportation economics. It is not to be expected that knowledge of such fundamentals is going to trickle down into the popular consciousness when not even the "top brass" of our industrial, financial and economic life is aware of them. For instance, those in a position to know report that, even in the "upper income brackets," only about two people in five realize that the transportation industry is receiving public assistance; and that there are more people who approve than disapprove such assistance. Considering how fundamental accurate and widespread information on this question is to any basic remedy of the railroads' financial anemia, it is evident that increased education effort - both intensive and extensive is badly needed in this area.

One of the country's noteworthy benefactions, the Alfred P. Sloan Foundation, has recently issued an admirable report for the 1947-48 biennium, revealing how this public trust has been expending its funds. Apart from its grants for the all-important research into cancer, the foundation has given support to a variety of projects in the field of popular education in economics, e.g., sponsorship of the University of Chicago "Round Table of the Air"; transcribed radio programs and motion pictures which present

economics in dramatic settings; and several cooperative projects in education for economic leadership and teacher training. The foundation has also supported a research project by the Brookings Institution, and has made awards for highway safety through the Automotive Safety Foundation. This foundation thus presents a diversified pattern of selective encouragement of a variety of projects, which could, with great profit to the public interest, be paralleled by a similar program in the field of transportation economics (railroad transportation particularly) and "human relations." The problems are available in large number. The pattern for progressing their solution has been set by experience. All that is lacking is the money - and an "angel" who has both the resources and sufficient imagination to donate them where they will do the most good to his industry, to his country, and to the recognition and perpetuation of the donor's sterling qualities.

There has been a lot of so-called "research" into transportation problems during the past two decades, most of it by government agencies or by special interests with an immediate purpose in view. Research by special interests, however competent, always suffers to at least some degree from suspicion that it may not be altogether objective. Research by government agencies, experience has shown, suffers from several inherent weaknesses, e.g., (1) failure to secure the most competent hands for the job to be done; (2) too much consideration by the researchers for the political effect their efforts may entail, and which they may wish to strengthen or avert; and (3) a propensity by governmental researchers (for instance, those who wrote the coordinator's reports on "public aids") to such confused prolixity that their efforts have little positive value. In the field of economic research, there is no substitute for the competent and independent scholar who has no master but his yearning to get at the facts and reduce them to effectively usable form. No agency can do such research so well as a privately financed educational institution — a type which has received much of its resources from the railroads but which has, so far, done little to repay the debt it owes to the generosity of past generations of railway leaders.

INDEX TO VOLUME 126

The index to the latest volume of Railway Age, January to June, 1949, is now ready for distribution, and copies may be had by those subscribers desiring them. Requests should be addressed to the Circulation Department, Railway Age, 30 Church street, New York 7. Subscribers who have in previous years made application for the index need not apply again; they will receive it as long as they continue to subscribe.

HOT BOXES— A PERENNIAL PROBLEM

An ever-present problem of train operation which is a perennial subject of study and discussion is the prevention of hot journal boxes. While many detail improvements affecting journal-box performance have been made over the years, standard journal boxes are still touchy and a source of trouble at sufficiently frequent intervals to be on the minds of railway officers to the very top.

In speaking before the Mechanical Division of the Association of American Railroads at Chicago on June 27, President Metzman of the New York Central said: "I find it impossible to believe, in this era of development of atomic energy, of electronic 'brains,' and other triumphs of science and engineering, that we must forever put up with something which is seemingly so simple as the hot box. Somewhere, somehow—and the sooner the better—there must be found a practical and economical means of eliminating or reducing to insignificance one of the great and traditional curses of the industry, our wasteful troubles with journal bearings."

What Mr. Metzman characterized as "seemingly so simple" is, indeed, the result of a complex chain of conditions and events. First are the mechanical conditions of the box and its contents. Starting with the journal-box lid which is still an object of development, these include the dust guard; the condition of the wedge, particularly the bearing in the top of the box; the condition of the brass, including its fit in the wedge and the bond of the lining to the brass; the condition of the journal; the quality of the waste and oil; the correctness of the practice of saturating the waste; and the skill with which it has been applied in the box.

With satisfactory conditions up to this point, there begins a chain of events which in one way or another determine whether or not the operation of the journal will be successful. The packing moves around the journal and to the outside of the box, particularly in cold weather, interfering with the distribution of oil to the journal and opening the way for waste grabs. The development of devices to hold the packing in place is now under way. Or the packing surface becomes glazed, effectively interrupting capillary action so that oil cannot reach the surface of the journal.

Many of the links in this chain are dependent upon the skill and sense of responsibility of the men changing wheels and journal bearings and inspecting and packing journal boxes, and it is not surprising that at more or less frequent intervals some of these links are broken. But whenever something of this kind happens, the ultimate cause of the hot box is a failure of lubrication.

Many of the failures attributable to slight variations of the mechanical features of the journal box would probably cease to be critical were the applica-

tion of oil to the bearing in adequate quantity completely assured. The real problem is a more effective application of the lubricant to the surfaces of the journal and the bearing.

IS IT AN ILL WIND?

From the perspective of the future the effective date of the 40-hour week will undoubtedly be seen as the beginning of a new era for the maintenance-of-way departments of the railroads. This statement seems justifiable on the basis of a careful evaluation of the many straws in a wind that has now attained the proportions of a gale. This wind has been quietly gathering strength since the merry-go-round of wage increases began at the close of the war; the incidence of the 40-hour week has added the final impetus to give it the quality of an irresistible force.

All the available evidence adds up to the conclusion that a long stride forward in mechanization is imminent. There are two ways of regarding mechanization in the light of prevailing wage rates. One aspect of these wages is that they enlarge the rewards available from full and effective use of machines. The other aspect is that the economic penalty for not using machines is too great to be ignored. Recent years have seen the introduction of many new and improved machines; others are being perfected and will soon be announced. But a great deal more is involved than simply buying a lot of equipment and putting it to use under the present set-up. Perhaps it will be found that basic organizational changes are needed to realize the greatest savings. Is the present organization for maintaining and repairing work equipment adequate to the new requirements? If not, how about proceeding to revise it? Underlying the entire problem is the need to realize that mechanization is much more than an incidental and complementary tool of the maintenance forces-it has become the foundation of all their efforts.

While the use of machines offers a way of getting work done more economically, efforts to effect a substantial reduction in the total amount of maintenance work to be done will be strengthened and intensified. This trend points to a track structure which may be more easily maintained to the desired line and surface. It also means a structure in which the components will have longer life, with a correspondingly greater interval between renewals.

To the maintenance man who has been striving to keep costs down in recent years, further progress in this direction may seem all but impossible. While the way may be difficult it is, however, clearly marked; and, as this route is followed, the likelihood is that what may have seemed impossible on September 1 will soon be found to be taking place as a regular part of the day's work.



From a painting by John Doctoroff, Chicago

RALPH BUDD SWITCHES JOBS

500 of his friends felicitate him in celebration at Railroad Fair as he retires from Burlington to assume chairmanship of Chicago Transit Authority

The dean of railway executives—Ralph Budd of the Burlington—who has headed a large railroad since 1919, when he became president of the Great Northern at the age of 40, retired on September 1 from his Burlington presidency and assumed another important full-time transportation assignment as chairman of the Chicago Transit Authority, which operates all that city's trolley, subway and elevated lines, and many buses.

On the eve of his retirement from the Burlington, August 31, 500 of Mr. Budd's friends from the transportation and allied industries gave a dinner in his honor at the Harbor View Restaurant at the Chicago Railroad Fair which had set this date aside as "Ralph Budd Day." A portrait in oil by the well-known Chicago portrait artist, John Doctoroff, was presented to the guest of honor by the committee on arrangements. Following the dinner the party en masse witnessed the Wheels a-Rolling pageant.

Honored as a Preceptor

Noteworthy among the group on hand to felicitate the retiring president on his achievements in main-line railroading, and to wish him Godspeed in his new venture in the challenging leadership of one of the country's major transit enterprises, were five railway presidents who rose to top management responsibilities from positions as his subordinates, namely Farrington of the Rock Island, Gavin of the Great Northern, Gurley of the Santa Fe, Whitman of the Western Pacific, and Harry Murphy, Mr. Budd's successor in the presidency of the Burlington. Also present were Mr. Budd's

By JAMES G. LYNE Editor, Railway Age

two sons, both of whom have attained positions of high rank in transportation—Robert as president of the Great Lakes Greyhound Bus Lines, and John, who has served as chief executive of a middle-sized railroad, the Chicago & Eastern Illinois, and who is now vice-president — operation of a much larger road, the Great Northern, which his father headed from 1919 to 1932.

Most professions have their leaders who are widely known to the general public, but there is also a more selective group who enjoy the particular esteem of their more expert and hence more critical fellow-craftsmen and who are sometimes designated from vocation to vocation as "the musicians' musician," "the surgeons' surgeon" or "the historians' historian," and so on. In this sense, Mr. Budd has long been and continues to be "the railroadmen's railroadman." The purpose of this report will be to examine Mr. Budd's career from the point of view of discerning if possible the reasons for the recognition he has achieved in the railroad industry itself—not praise, but appraisal.

A Significant Meeting

In 1903 Ralph Budd, then 24 years old, and having had three years' experience in the engineering department of the Great Western, was engineer in charge of construction of the west end of the Rock Island's St. Louis-Kansas City line (known as the St. Louis, Kansas City & Colorado). The following year, just

about the time construction of the line was completed -through J. L. Campbell, who was chief engineer of the St.L.K.C.&C., and W. L. Darling, chief engineer of the Rock Island-Mr. Budd had the good fortune to make the acquaintance of the famous engineer, John F. Stevens, who at that time was vice-president of the Rock Island. The young engineer's capacity for performance in construction work must have impressed the veteran-at any rate two years later, in 1906, after young Budd had returned to the engineering department of the Great Western and was stationed at Chicago, Stevens sought him out. The bill determining the type of canal at Panama was being debated in Congress: Stevens was the chief engineer of the project and, if Congress decided upon a lock type canal (i.e., involving, predominantly, steam-shovel excavating instead of dredging, which would dominate the operation if a sea-level canal were chosen), then Stevens wanted Ralph Budd to go to Panama with him.

It became so evident by late June of 1906 that the choice would fall to the lock canal that Stevens, who had been in Washington for congressional hearings, set sail for Colon, with Budd in his company; and the act authorizing the lock canal became a law while the party was at sea. Once arrived at the Isthmus, the 27-year old Ralph Budd was named maintenance engineer of the Panama Railroad—a title soon changed to

chief engineer.

The principal use of the railroad at that time was in aiding the construction of the canal. It was the chief engineer of the Panama Railroad who arranged for connecting tracks leading to various points of activity within the canal prism, and for those leading to trestles in low ground where waste rock and earth were dumped after being hauled some distance on the railroad. The railroad was turned over by day almost exclusively to hauling excavation from the canal. All commercial freight trains which handled the heavy trans-Isthmian traffic between shipsides at Panama and Colon ran only at night. The traffic density was about as high as that of any stretch of railroad in the United States at that time. The line was double tracked rapidly and many yard and other sidings were built.

Joining Hill's Staff

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In April, 1907, John F. Stevens left the canal job and was succeeded by Colonel, later General, Goethals. President Theodore Roosevelt explained that he had selected a military engineer, this time, rather than a civilian, not because of prejudice in favor of the military, but because an army man could not resign. The Panama Railroad's chief engineer offered, also, to resign, but Colonel Goethals urged him to stay, saying that he would have a freer hand under the new regime than the old, because Goethals knew nothing about railroading. So Budd stayed-and, while continuing to hold his position as chief engineer of the Panama Railroad, was also given, from the Panama Canal Commission, the assignment of relocating the railroad around the rim of the big area which was destined to become Gatun Lake. The job involved one fill 95 feet high, which was built with easy slopes, since waste material was plentiful.

Ralph Budd spent 39 months on the Panama job. While he was in the United States on leave in 1909,

Stevens again sought him out. After leaving Panama in 1907, Stevens had been associated briefly with the New Haven Railroad, but in 1909 he was with James J. Hill—in charge of construction of the Oregon Trunk and the other important railroads then being built by the Hill lines in the Pacific Northwest. He was, in fact, president of the Oregon Trunk at the time. So Ralph Budd did not return to Panama but went on reconnaissance for Stevens in Oregon and California, and one such reconnaissance was that for the line which was to become the Great Northern's extension into Northern California—a project which was not completed until 1931, near the end of Mr. Budd's presidency of that road.

It was in 1910 that Budd, through Stevens, made the acquaintance of James J. Hill when the "Empire Builder" was inspecting construction work along the Deschutes river. Mr. Hill later saw Budd on several occasions in St. Paul and, in 1912, took him there as assistant to the president. Through his close association with Mr. Hill, Mr. Budd, of course, became acquainted with a wide circle of influential people—who thus had an opportunity to appraise his capacities as John F. Stevens and James J. Hill had already done.

The Essential Characteristic

Making the acquaintance in 1904 of John F. Stevens, it thus appears, started a "chain reaction" which led Ralph Budd, in turn, to acquaintance six years later with James J. Hill, and culminated in 1919 in his election to the presidency of the Great Northern. Mr. Budd today is inclined to credit his meeting with John F. Stevens and developments subsequent to that meeting to chance or to "luck." A reporter may observe, however, that there is nothing especially fortuitous about a meeting between the vice-president of a railroad and an engineer engaged in the construction of an important extension of line. What was unusual about the Stevens-Budd meeting in 1904 was not the meeting itself but the fact that a railroad executive officer and eminent engineer should be so impressed that he thereafter sought the young engineer's services in positions of responsibility on two projects of great magnitude.

If there be an element of "luck" in the meeting by a young man with persons of responsibility who could advance him professionally, then it is a form of "luck" with which practically every young man is favored at some time or times in his career. The meeting procures the advancement only in the sense that a detonating current fires a charge of dynamite. Without the dynamite the electric current would produce no noticeable

results.

Shortly after Mr. Budd became assistant to the president of the Great Northern he was given, in addition, the duties of chief engineer, Mr. Hill having dismissed the chief engineer because some of the old snow sheds in the Cascade Mountains collapsed under the heavy slides of that year. About a year later it became evident that one man, even an exceptional one, could not satisfactorily perform the duties of chief engineer and also do all the work as assistant to president which Mr. Hill assigned to Ralph Budd; so Hill asked his assistant whether he knew of anyone competent to relieve him of his duties of chief engineer. Mr. Budd answered: Yes,

and named the man Hill had discharged the year before; and Hill permitted the reinstatement of the former chief engineer—Budd's championing of him having been ably seconded by Hill's son, Louis.

When this chief engineer retired on pension, 10 years thereafter, the Great Northern's maintenance engineer, J. W. R. Davis was advanced to succeed him. It so happened that Davis, besides being a highly competent engineer, had also been division engineer of the C.G.W. at Des Moines back in Ralph Budd's earliest days of railroading, when he served as assistant engineer under Davis. Davis had, at that time been instrumental in getting young Budd's monthly salary raised from \$65 to \$75. Davis' deserts afforded one of those happy occasions when, in promoting him to chief engineer of the G. N., Mr. Budd was able to reciprocate a long-appreciated favor, while also taking action which was called for in the interests of the company's welfare.

The "Hill Principle"

From Stevens and Hill, Ralph Budd absorbed the full importance of the concept that in purchasing transportation, all the purchaser will pay for is movement over the shortest and most nearly horizontal line from origin to destination. If there is a lot of avoidable movement up and down and from side to side-that represents an expense which the supplier of the service must absorb. Mr. Budd expresses, in terms of practical action, the philosophy he learned from Hill in these words: "You can't get anywhere competitively in railroading without constant improvement in the property and the service." Hill realized earlier and more fully than his contemporaries the great importance of low grades and easy curvature—and wherever, to minimize original construction costs, he had to forego realizing this objective, he always regarded his steep grades and sharp curves as temporary devices, and provided for their amelioration whenever funds were available.

There is a further practical application of the "Hill principle," which is that some section of the railroad should be chosen each year to be brought up to standards as good as the best. The Great Northern had followed this policy year after year, until practically all of the temporary heavy grades had been removed. By the middle Twenties the railroad had been brought up to high standards—except 50 miles through the Cascades which remained the "weak link in the chain." Work on the new Cascade line with its famous tunnel was begun in 1926, ten years after the death of James J. Hill; and, soon after its completion, passenger train schedules were reduced by 12 hours.

Prior to the construction of the Cascade Tunnel, the time of passenger trains between Chicago and Seattle was 72 hours. Today it is 45 hours and, Mr. Budd says, it doesn't require any more intensive effort to make today's 45-hour schedule than 1926's 72-hour one—which gives some quantitative measure of the improvement which has occurred in the physical standards of railroading in the intervening years.

The last great project with which Mr. Budd was associated on the Great Northern was the completion in 1931 of its line into California, serving the great pine lumber mills of the Klamath Falls area, connect-

ing with the Western Pacific at Bieber and through it, with the Santa Fe at Stockton—an extension which he had surveyed twenty years earlier. This connection had long been in the mind of James J. Hill, and was one of his grand strategic concepts. Of the great transcontinental systems to the south, the Harriman lines had their own extensions into the Pacific Northwest, but the Santa Fe did not. By the connection with the Santa Fe, through the Western Pacific, Hill had in mind, not only the better balancing of the competitive situation within the area, but also the provision of an alternative transportation route—which, as it turned out, was a national defense asset of the highest value during the recent war.

When Ralph Budd went to the Burlington in 1932 he took over the leadership on a property which was more matured than the relatively youthful Great Northern, but he managed nevertheless to find opportunity there for continued application of the principle of unremitting improvement which he had learned from James J. Hill, and had practiced until it had become an ingrained habit. Without doubt, the application of this principle to the Burlington did not go as far as it would have gone, had the great depression and the war not intervened—but it went a long way, and steadily, anyhow.

Parallel progress also was made with the company's financial structure. Maturity of the \$85,000,000 Illinois Division mortgage bonds, due July 1, 1949, was anticipated by call and payment, partly from treasury cash and partly by refunding at lower interest rates. Other bond issues were called or purchased on tenders and refunded in part. As a result, bonded indebtedness which amounted to \$219,472,000 December 31, 1940, was reduced to \$152,355,100 by June 30, 1949, a reduction of \$67,116,900, or 30.6 per cent; average bond interest rates were reduced from 4.14 per cent to 3.34 per cent; and annual bond interest reduced from \$9,075,635 to \$5,089,451, or 43.9 per cent. The first and refunding mortgage has been established as a medium for future financing; maturities have been staggered in manageable proportions; and sinking funds provided on all new issues.

New conditions which had arisen by the time Mr. Budd went to the Burlington called for a revision in emphasis in the application of the "Hill principle." For example, one of the Burlington's one-time elements of strength had become a major weakness, viz., its large mileage of branch lines. These tracks had once served as profitable feeders, but the development of highway transportation had robbed many of them of their profitability and made them a drain upon, rather than a source of, the system's strength. The abandonment of such lines has been vigorously pursued-in the face, of course, of regulatory handicaps and occasionally hostile public opinion. On lines carrying, or likely to attract, a profitable traffic volume, the program of improvement has been unremitting-more and better ballast, heavier rail, improved drainage and a greater degree of permanence built into well-located

The story of the Burlington's pioneering with Diesel motive power and improved passenger equipment is so well known that it needs only to be mentioned. As motive power and rolling stock conditions have changed—along with traffic conditions—repair facilities have

been appropriately relocated, with the centralization of function necessary to justify the provision of modern and economical shop facilities and equipment. And signal modernization has paralleled that of the rest of the plant.

Perhaps nowhere else is the continued applicability of the Hill principle better exemplified than in the Burlington's program of improvement between Galesburg and Kansas City, and between St. Louis and Kansas City. The Burlington's route across Missouri is the old Hannibal & St. Joe—running almost due east and west across the middle of the northern third of the state. Freight traffic from St. Louis to Kansas City now has to go northward along the Mississippi river all the way to Hannibal, then practically straight westward, turning southward at Cameron Junction to complete the "round-the-block" route between the two largest Missouri cities.

The Burlington's Chicago-Kansas City traffic also uses this Hannibal & St. Joe "axis," which it joins at Palmyra (west of Hannibal) with a diagonal line southwesterly from Galesburg. Thence, Chicago-Kansas City traffic goes west over the Hannibal & St. Joe line, turning the same "square corner" at Cameron Junction down into Kansas City that the St. Louis-Kansas City freight traffic now follows. The Burlington in 1946 proposed to ameliorate greatly the situation of both its Chicago-Kansas City and St. Louis-Kansas City lines, and at very modest cost, by traffic rights exchanges with the Santa Fe—a proposal with which most people in the railroad industry are familiar, but which failed to receive I.C.C. approval.

The Burlington now proposes to achieve practically the same result—at necessarily somewhat greater cost—by developing a new line (partially in existence) in western Missouri, which will be the hypotenuse of what is almost a right triangle formed by its existing line through Cameron Junction. The proposed new route will shorten the Burlington's Kansas City-Chicago line by 23 miles and give it much easier grades and curves than those on the 112 miles of line to be avoided by the proposed cut-off. This new project, as well as the improved St. Louis-Kansas City route—using trackage rights from the end of a Burlington branch terminating near Mexico, Mo., over the G.M. & O. into Kansas City—has received Interstate Commerce Commission approval.

In testifying before the I.C.C. in behalf of the application for authority to build the cut-off in western Missouri, Mr. Budd pointed out that the Burlington was the first railroad to enter Kansas City from Chicago, its line into Kansas City from Cameron Junction (with a bridge across the Missouri river) having been completed in 1869. For twenty years the Burlington was the leader in passenger, mail and freight traffic between these cities, but the construction by the Santa Fe of a more direct and higher-standard line gradually resulted in the loss by the Burlington of its position of pre-eminence—a condition which it now believes should be corrected, at least in considerable measure, because (1) of the growing importance of transit time in successful competition for traffic; and (2) of the increased value of Kansas City connections resulting from the intensified development which is occurring in the Southwest.

It is both interesting and instructive to note that

the Burlington's neighbors—the Santa Fe and the Rock Island—are headed by men who railroaded under Budd on the Burlington; and have given evidence of activation by the same principle of continued property and service improvement, with due regard to long-term strategy, which Mr. Budd learned from James J. Hill.

Complementary to his concern with the physical properties and improved service, Mr. Budd has brought a factor to bear in railroad management for which he cannot give credit to any predecessor—namely, his mastery of the history of the properties he manages. A great many people think of history as more of a hobby or a pastime than a pursuit of practical value, but those who have taken it up seriously and systematically know that it is a discipline which gives them an understanding of their properties as "going concerns" which can be derived in no other way. It is a knowledge which is particularly helpful in interpreting a company to the public in terms of its general social usefulness—and not merely in units of money or physical production.

Mr. Budd's interest in history is not that of a diletante, nor is it circumscribed by his pride in his own company. He knows the general history, and especially the business history and the railroad history, of the territory where he has worked as well as anyone except the professional historians—and the latter he has helped in many ways, especially by gaining access for them to documentary records not otherwise available, but indispensable for dependable and instructive historical research.

The Burlington's retiring president has shown a lively interest in the human relations side of the railroad business in many more ways than by his interest in history, and by his emphasis on the contribution of the railways to regional and national development. He is quietly at ease in any company and, consequently, is in frequent conversation with people from all walks of life—without identifying himself, unless the occasion calls for it. This attribute gives him a greater degree of reliability and assurance in deciding questions of policy where public opinion is involved than is possible to industrial executives who lead lives more insulated from those with whom they have no necessary dealings.

Associates of Ralph Budd find him inclined in discussion rather to the Socratic method—asking questions and helping those with whom he converses to their own conclusions—than to the dogmatic assertion of his own opinions. Asked whether he ever gets angry, one of his associates replied that he gets "rather firm" at times—but, as for real anger, well, the only evidence the informant had on that was hearsay, and pretty old at that.

Applying Fundamentals

Endowed with deep understanding of the fundamental thrift of railroad transportation—as a mechanical concept, and not merely economic—Mr. Budd has consistently favored policies which will give the railroads traffic in sufficient quantities to realize the economy inherent in mass movement. To this end, he has been an advocate of railroad consolidation—not to the extent likely to eliminate competition, but to avoid moving goods in retail lots where "getting it wholesale" is so

much more profitable to all concerned. This same understanding has led him to question the economy of so large a diversion of long-haul traffic to agencies of transportation other than the railroads, a development which he believes has increased the overall cost of transportation to the nation.

For the same reason, he has in recent years indicated concern over the adequacy of the supply of funds available to the railroads for improving their properties. When such improvements promise more in the way of a return to society as a whole than to the railroads themselves, he has suggested the propriety of freeing earnings so expended from income taxation. On such questions of major policy Mr. Budd is not a frequent speech-maker, but he seldom fails on the occasions when he does speak to make some original contribution to the discussion of the assigned subject.

In 1940 and 1941 when Mr. Budd spent a great deal of time in Washington, as transportation commissioner for the Council for National Defense, in developing transportation plans for military preparedness, he insisted upon working through existing organizations and with only a small staff of his own. He is not any more in favor of circuitous routes in the transaction of official business than he is of such routes for the movement of traffic. This paper's Washington editor had occasion to see Mr. Budd or phone him frequently during his stay in Washington. Knowing Washington as he does, this editor was struck by two things in his contact with Mr. Budd, viz., (1) the frequency with which Mr. Budd himself answered the telephone with-

out the intervention of a subordinate; and (2) how clean the transportation commissioner kept his desk, not by concealing unfinished work, but by completing each job deftly and in entirety, so procedures were not cluttered up with pending decisions.

Seeking for principles and practices from the foregoing recital which might be helpful as a guide to becoming "a railroadmen's railroadman," this reporter suggests the following incomplete list:

1. Attainment of the greatest possible proficiency at the assigned job and study to qualify for a better one.

2. A persistent search for facts, and knowledge of people, through conversation and discussion with all kinds of them—with an approach which is inquisitive rather than combative. The technical, economic and human factors in business are equally important and no one of them can safely be neglected.

3. Development from contact, direct or indirect, with the masters of the business of a consistent long-term philosophy, and relentless pursuit of the policy, regardless of vicissitudes which vary from day to day.

4. Cultivation of intellectual interests which are always larger than the specialized job upon which one is engaged—but not so wide as to be spread out too thinly. The study of history, especially the history of one's own business and region, is useful to this end.

5. Development of habits of orderly and rapid thought and action, integrity and dependability. Men are valuable, and receive advancement as frequently, for what they are as for what they know or what they can accomplish.



New Nordberg Ballast Cleaner

The Nordberg Ballastex-Screenex combination, showing the excavating and elevating bucket conveyor on the right, followed by the Screenex, from which cleaned stone is dropping back into the track shoulder

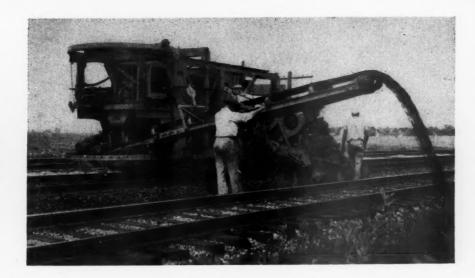
With the announcement of its new Screenex machine for cleaning stone ballast, the Nordberg Manufacturing Company, Milwaukee, Wis., now has a battery of three types of machines which, used in conjunction with each other, are able to handle any ballast reconditioning problem. The other two machines are the Cribex, which removes all ballast from tie cribs, depositing it on the shoulders, and the Ballastex, which excavates the shoulder and intertrack ballast, including any ballast

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removed from the cribs by Cribex machines, and either wastes the material outright or, with the Screenex, cleans all of the ballast, wasting the dirt, and depositing the clean stone back in the track at any point desired.* The primary feature of the new Screenex is its screen, which is designed to insure effective separation of the dirt and stone, regardless of the moisture

^{*}A description of the use of Cribex machines and the Ballastex in ballast removal operations on the Burlington appeared in Railway Age of April 9.

A rear-side view of the Ballastex-Screenex, showing the 20-ft. waste conveyor carrying the dirt screenings across one track to the roadway shoulder



content of the fouled ballast. Thus, it is claimed that the unit can be operated continuously through or immediately following rainy weather.

The Screenex is a compact, self-hauled, wheel-mounted unit, involving a feeding conveyor, a vibrating screen, discharge conveyors for returning the cleaned stone to the track and the screenings out beyond the track shoulder, and drive mechanisms for operating the screen and conveyors. It is always operated in conjunction with the Ballastex, to which it is coupled when in use. The Ballastex picks up the ballast from the intertrack or shoulder and, by means of a buckettype digging and elevating conveyor, feeds it over a lateral auxiliary conveyor onto the receiving conveyor of the Screenex. This conveyor elevates the ballast to the top of a Symons Rod Deck screen—a type of screen developed by Nordberg's Crusher & Screen division to fill the need of the mining industry for a screen to handle wet and gummy material.

The screen of the Screenex is essentially a series of banks of steel rods, set in rubber, in which the individual rods can be set any distance apart so that they will screen out material of any desired size. As a whole the screen is vibrated by an eccentric weight driven by a LeRoy 30-hp. gasoline engine. The engine also drives hydraulic pumps, from which oil is fed to hydraulic motors, which, in turn, drive the various conveyors.

Dirt screened from the ballast falls onto a belt conveyor mounted under the screen and is carried to a 20-ft. waste conveyor at the rear of the machine, which has a 270-deg. swing for disposing of the dirt to either side of the track. The length of this conveyor and its belt speed combine to throw the dirt clear of the shoulder of an adjacent track at 14-ft. centers.

The cleaned stone can be returned to the track as desired—entirely to empty cribs, entirely to the intertrack space or shoulder being cleaned, or divided between the cribs and intertrack or shoulder in any proportion, as dictated by special requirements.

The Ballastex feeding the Screenex can excavate a 42-in. swath of ballast to a depth of 19½ in. below the top of tie when working on 132-lb. rail, and, like the Screenex, it can be removed manually from the track. The combination is propelled by an hydraulic motor-

actuated winch mounted on the forward end of the Ballastex, which takes in on two 120-ft. lengths of chain which are run out ahead of the equipment progressively and anchored to a tie. The entire operating mechanisms are readily cleared for traffic on adjacent tracks

The forward speed of the units varies with the amount of material to be handled. Actual performance to date, when cleaning material in the shoulder or intertrack only, has averaged a rail length (39 ft.) in 1½ min. Maximum daily production to date has been 5,577 track feet of intertrack in 5½ on-track hours.

The force required to operate the Ballastex-Screenex includes two operators, a foreman, flag protection as required by railroad rules, and three trackmen—one to handle the propelling chains, one to handle the waste conveyor and assist the Screenex operator, and a third to act as watchman.

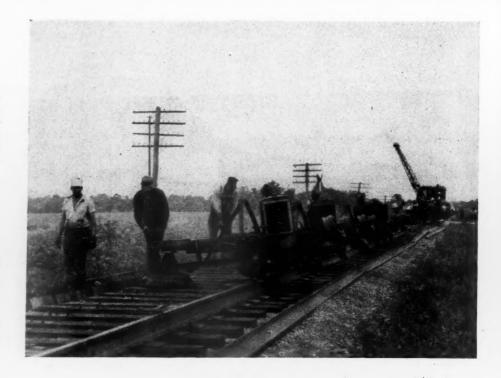
The Screenex, like the Ballastex and Cribex, is available on a lease basis, under which Nordberg furnishes service, an instructor and repair parts, while the railroad furnishes the operating force and fuel and oil.



A Cribex, its digging arm entering a crib, to drag out all ballast to the bottoms of the ties, or lower as desired

Practically every road participating in the survey plans to increase its purchases of work equipment as one means of minimizing the added cost of the 40-hr. week

On many roads the 40-hr. week will result in important changes in the work and status of section gangs, aimed particularly at a reduction in the amount of work to be done by these crews and its transfer to more efficient, highly-mechanized floating gangs



ed incred the references



are revealed in survey covering 13 large roads — Most difficult problem will be to counteract loss of manhours without increased expenditures

Many changes in working schedules

Roadway Forces-

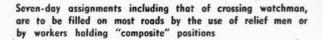
The maintenance-of-way and structures departments of the railroads were able to make the shift to the 40-hour week on September 1 with no more than a slight rumbling of gears. While the shift entailed major changes in working schedules, complications in this respect were minimized by careful advance planning which, on the majority of roads, resulted in most details of the new schedules being settled well ahead of the deadline. The big problem in these departments in making the adjustment to the five-day week, and

one still far from solved, is to find ways of increasing the man-hour output to permit the properties to be adequately maintained without any increase in the amount of money that is spent for this purpose. One way to accomplish this is through the use of more machines, and the result is that the 40-hour week has generated a broad and powerful movement toward increased mechanization of the maintenance forces. Another way is increased cooperation with the operating department in minimizing interruptions to track work by passing trains.

The foregoing statements are based in large part on the results of a survey among top-ranking maintenance officers to determine not only the nature of the adjustments being made in working schedules to adapt them to the shorter work week, but also the steps that are being taken or are proposed to make up for the loss



More intensive supervision of maintenance gangs is planned on some roads for the purpose of increasing their efficiency





and the 40-Hour Week

in man-hours. Thirteen such officers, representing as many railroads, participated in the survey, each of whom submitted answers to a questionnaire covering all phases of the subject.

Staggering of Gangs Limited

One of the more important points that had to be settled in planning for the 40-hour week was whether it would be feasible and possible to "stagger" section gangs so that some would be on duty Monday through Friday and others Tuesday through Saturday, the purpose being to have crews on duty Saturday for emergencies. None of those replying to the questionnaire plan such an arrangement on more than a limited scale. Four roads plan no staggering of section gangs whatever; all the others will limit this practice to terminals

or other selected locations. One road reports that section gangs can be staggered at definite locations between November 1 and March 31, the object apparently being to have men on duty on Saturdays to cope with winter storms.

There is every reason to believe that the practice of limiting the staggering of section gangs to relatively few locations, if, indeed, this is done at all, is well-nigh universal, although it is known that at least one large road is staggering its section crews on a system-wide basis. On this road, which was not included in the survey, the practice is for alternate gangs to work Monday through Friday while the others are on duty Tuesday through Saturday. The gangs on duty Monday and Saturday will normally be engaged in routine maintenance work on their own territories, but in event of emergency they may be shifted without restriction to adjoining sections. At the end of each sixmonth period the schedule is changed so that a different group of section gangs will be working on Saturdays.

A question relative to what restrictions, under the staggered arrangement, will govern the use of section gangs on territories other than their own, brought a variety of answers. Three roads said this practice was permissible in emergencies without restrictions; one indicated that its agreement with the union did not permit staggering at all; another said that section crews could be used on sections "adjoining and adjac-

ent to their own"; still another said there were no restrictions in territories covered by agreement as to staggering; and one said there were no restrictions "provided the foreman on the section where work is to be done has obtained leave." On a road that is contemplating the use of floating "maintenance" gangs the matter of whether section gangs may be used on other sections is as yet unsettled, but it was indicated that the floating gangs could be worked anywhere on a division "if so assigned."

Sections Will Be Longer

Judging by the replies to the questionnaire the 40-hour week is going to result in major changes in the length of sections and in the work and status of section gangs. On seven of the roads participating in the survey definite plans are afoot, or have already been carried out, for lengthening track sections. On one, of these the number of section and yard gangs was reduced from 954 to 787 on June 1, another has already lengthened its sections, and a third plans to eliminate 120 sections out of a total of 770, the explanation being that this has been made necessary by the altered relationship between expenses and earnings, and that excellent track conditions have made the step possible.

Starting next year another of the seven roads plans to lengthen some of its main-line sections from 12 to 18 mi., at the same time shifting much of the work normally done by section crews to small motorized floating gangs. A fifth road plans to lengthen sections where this seems justified by improved track conditions or where traffic has changed, and is also contemplating increased supervision and the creation of floating "maintenance" gangs, which will permit the lengthening of sections at other locations. The sixth road plans a set-up under which sections will be lengthened and "booster" gangs will take over part of the work now done by the section gangs. The seventh road has a plan under which sections will be lengthened to secure larger gangs, each working under a single foreman.

Only two of the 13 roads replying stated categorically that no lengthening of sections was contemplated. Four, using such expressions as "not at present" or "may consider later," implied that future events would be allowed to determine whether sections were to be lengthened.

The question concerning lengthening track sections was rather closely related to one inquiring in what ways the scope and character of section work would be changed under the new agreement. Seven of those replying indicated that no changes were planned, at least for the present. On the other six roads making replies the intention is to lighten the work of the section forces by transferring some of it to either conventional extra gangs or smaller floating gangs organized especially for this purpose, although one of these roads hopes to put its section crews on a more efficient basis by the "greater use of automobiles, trucks and track motor cars."

The companies participating in the survey were practically unanimous in replying "no" to a question as to whether, if the forces were rained out any time, Monday through Friday, they could be worked on Saturday to the limit of 40 hours without overtime. There was only one possible rift in this solid array

of negative answers, and that was the reply of one road which said there was a "possibility" which "will be developed later."

Two of the questions brought answers that indicate complete uniformity of practice. Every road answered "yes" to the question: "Do you plan to put extra gangs on a straight five-day week?" and all of them replied "no" to the query: "Will extra-gang labor be allowed to work four 10-hr. days to accumulate 40 hr. in less than five days, without overtime?"

Seven of the roads replying to the questionnaire are planning to make greater use of extra gangs. Among these are the three roads that have plans for establishing small floating gangs, variously termed "maintenance," "booster" or "bucket" gangs. Apparently the reasoning is that such gangs, motorized and highly mechanized, will be able to do the work more economically than conventional section gangs. Of the other six lines replying, three hedged somewhat on the matter of making greater use of extra gangs, saying that they had no such plans "at present." Two, however, answered with a definite "no." The thirteenth road plans to use extra gangs on an increased scale only as needed to do authorized work.

Bridge and Building Forces

The replies were practically unanimous in indicating that the bridge and building and water service forces will work a straight 5-day, 40-hr. week, with staggering of these forces planned only at some terminals on a few roads. On one road, which apparently had made a better "deal" with the union than the others, the water service forces will be available for emergency work on the sixth day without penalty. On another road, while the bridge and building and water service forces will be assigned to work a straight fiveday week, there is hope of negotiating an agreement which will permit these forces to work more days in a week for the purpose of accumulating their days off. "It seems practical," read this reply, "from the standpoint of both the employees and the company to work a six-day week for say a period of five weeks, accumulating a full week off. This would simplify the matter of providing relief employees and should be desirable from the employee's standpoint in instances where he may be living in a camp a considerable distance from home.'

Relief Men to Be Used

Nearly all the roads replying will use relief men in greater or less degree to help cover six- and seven-day assignments. One road, while planning to use relief men where necessary, intends in most cases to use section laborers or bridgemen to cover six- or seven-day assignments. It was explained that section laborers can be used for this purpose on most jobs, except that bridgemen must be used as bridge tenders. Most of the replies indicated that provision has been made for the use of relief men with composite assignments, although two stated definitely that no such provision has been made, and a third said that this matter had not as yet been entirely worked out. Explaining the use of composite relief men, one reply said that trackmen will work as crossing watchmen, crossing watchmen will

serve as bridge tenders, and plumbers will act as bridge engineers.

Only three roads, and possibly a fourth, indicated that provision has been made for accumulating time off on a monthly basis. On one of these roads the agreement provides that, where an operational problem arises wherein it is not possible to allow two days off in seven, rest days may be accumulated. On another it is permissible under certain conditions to work men five weeks (apparently of six days) and then have them lay off a full week. Another road simply stated that the accumulation of time off monthly was permissible only for relief men at certain locations.

The Problem of Supervision

A question regarding the working schedules of roadmasters and supervisors brought replies from six roads indicating that these supervisory officers will continue to work six days a week on much the same basis as previously. On four roads it is planned that roadmasters will work a five-day week on a basis whereby Saturday will be comparable to Sunday under the old procedure. On another road the roadmasters will be staggered "to cover Saturdays and Sundays as at present," while on still another roadmasters will work five days and track supervisors six days on a "service-rendered basis, with adjustment in salary." The question of working schedules for roadmasters was reported as being undecided on one line. On those roads where roadmasters and supervisors are to be on the job on Saturday, their duties on that day are variously described as "clerical work and riding trains," "working and planning ahead," "the same as at present so far as is known," and "for service as required."

No changes are contemplated in the number of roadmasters or supervisors, on 11 of the roads replying, although several of these used the qualifying phrase "for the present." One of the 11 expressed the opinion that some additional supervision may prove economical by eliminating the patrolling of track by section foremen, and by providing closer supervision of the track forces. Of the other two roads one is "putting on about 45 new positions of machine supervisors, who will cover the territory more frequently and effect more intensive supervision over section and maintenance gangs." The other expects to increase the number of roadmasters by 50 per cent, shortening each roadmaster's district from 190 mi. to 130 mi. This measure, involving only 11 additional roadmasters, is expected to result in a saving in labor of about 150 track men.

Plan Increased Use of Machines

Two railroads stated that there will be no track inspection on Saturdays; three others said their present methods of track inspection on that day would not be affected; three more said that this function would be handled on Saturday as it is now performed on Sunday; another three said the Saturday inspection would be performed by the supervisory forces; and one said that patrol crews would work on Saturday. One road failed to indicate its plans in this regard.

The effect of the 40-hour week on the acquisition of machines is indicated by the fact that practically

every one of the replies stated that the shorter week would result in increased purchases of power tools and machines, although one said this would not be the case except where the increased cost of labor would warrant the use of more equipment, while another, saying that larger purchases would "probably" result, added that work equipment had been bought heavily in recent years.

Four roads gave specific answers to a question relative to the magnitude of the increase expected. Three were in the 20-25 per cent range, but one road stated it expects to buy at least 200 per cent more equipment. Several stated that the extent of the increased purchases would depend on earnings.

What types of machines do the railroads anticipate purchasing? Listed most frequently in the answers to this question were power tamping units and all types of power tools for the bridge and building forces, with power plants. However, a great variety of other types of equipment was also listed, such as spike pullers and spike drivers, rail saws and drills, small air compressors for spot tamping, track cribbers, road rollers, moving equipment, material-handling cranes, off-track equipment, and many others.

Operating Department Can Help

Practically all those replying to the questionnaire stated that the operating department can help to increase the efficiency of the maintenance forces, largely by taking action that will minimize interruptions to the work by passing trains. The chorus of the replies was that this can be done by allowing more liberal use of the tracks and by bunching or fleeting trains. One reply listed six steps that can be taken by the operating department in cooperating with the maintenance forces, viz.:

(1) Properly handling bulletins for train crews used on work trains to prevent charges for crews on days that maintenance forces are not working.

(2) Eliminate delay in delivery of materials and equipment, and the assignment of train crews where needed with roadway machines.

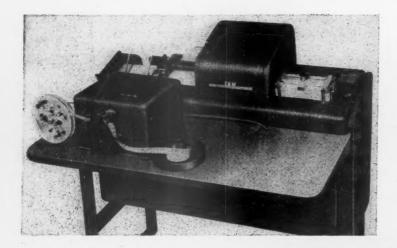
(3) Furnish proper equipment for delivery of materials to keep unloading time down to the absolute minimum, particularly cars handling ties and ballast so as to permit proper distribution of ballast.

(4) Bunching of trains where possible to avoid numerous delays in such work as laying rail and replacement of bridges.

(5) Promptly furnishing motor car line-ups to enable maintenance forces to get over the track and to get to their work.

(6) Furnish trucks and mechanical equipment, where they can be made available, for maintenance work.

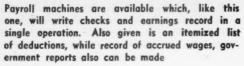
All except two of the roads submitting replies reported that they had signed agreements with the local brotherhoods covering all points of the 40-hour week, although one of these said that a single point remained open. Ten said that they had not found it necessary to refer points in dispute to the 40-Hour Week Committee, although one of these expects that there will be some arbitrary contesting of action taken by the railroad after September 1. The other three said that points involving deviation from the Monday-through-Friday work week had come up for adjudication.



This tape-controlled card punch, with its sister machine, the card-controlled tape punch, is one of the latest things in this field. The latter machine punches information from cards to the tape. Tape may be sent to another office and run through machine shown here and a duplicate set of cards may be made. It is also possible with the same machines to send the information between two points by commercial wire service, an operation which is performed at high speed

Below is shown a bookkeeping machine and a synchromatic punch. At the same time as information is put into the bookkeeping machine cards are cut showing the same information. Cards then are used for assembling statistics, etc. This installation is a freight claim accounting set-up on a large railroad







PAPERWORK and the 40-Hour Week

he 40-hour week for railroad clerical forces began September 1, bringing with it the necessity for further economies in the performance of all paperwork, both in the accounting departments and elsewhere. Therefore, ways and means must be found to short-cut procedures and reduce clerical expense. The size and difficulty of the undertaking are emphasized by the fact that 25 to 30 thousand employees are engaged in clerical work in accounting departments alone, with an annual payroll of more than \$100 million.

Two principal avenues of approach to the task of reducing clerical expense are being taken: First, a revision of methods and procedures; and second, mechanization. The first contemplates a streamlining of all varieties of paperwork, which means simply the elimination of all unnecessary steps, especially duplications of effort — they may or may not be in the same department — which, with improved form de-

Machines and improved procedures are cutting the cost of clerical work — cameras, typewriters, tabulating equipment, and improved forms help the railroads

sign and writing methods, will give the same results as before, or better. Several commercial concerns are working closely with the railroads in their efforts to simplify their procedures while maintaining the vital factors of speed, economy and accuracy. (For one case, see *Railway Age* of September 11, 1948, page 72.)





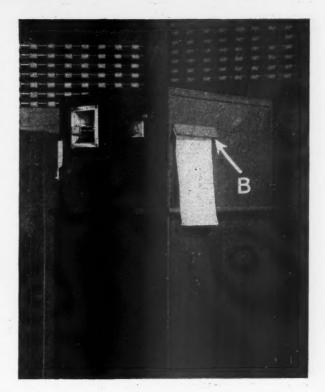
Above left—The camera, both the photocopy variety and the microfilming, is finding increasing use on railroads. Speedy and exact copying are great advantages, whether copying waybills or other documents. Size reduction, especially in microfilming records, cuts greatly amounts of storage space needed for records. Above right—The typewriter, while in some respects a rather prosaic instrument, has been improved by electrification. Used either in straight typing work or with a fanfold arrangement for billing, as in the above photograph, it can improve the speed of operation by as much as 40 per cent, depending on the job

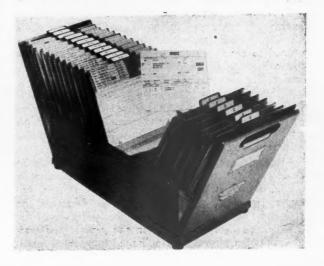
Right—Issuing of tickets, either local or interline, also can be mechanized to a great degree with machines such as this one. In addition, these machines automatically give a tamperproof record of all transactions

Below—Machines have not provided all the answers to railroad accounting problems. Visible records such as the one here, for handling stores records, accounts receivable, freight claim information, and many other functions, have materially aided in speeding up and reducing paperwork through elimination of unnecessary steps

Mechanization, the second of the two ways in which the railroads are trying to cut the expense of performing clerical work, has come a long way in past years, but many possibilities for improvement are still to be found. This subject was stressed at the recent meeting of the Accounting Division of the Association of American Railroads at Atlantic City, N. J., in May (reported in Railway Age of May 28, page 35), both in the business sessions of the meeting itself and at the exhibit staged by 18 leading manufacturers of office machines. Over the years those manufacturers have developed machines which singly or in groups can perform almost every office routine. To meet the peculiar needs of the railroad industry, office equipment manufacturers have gone even into the transportation and operating departments and furnished them with office equipment to handle work when volume and repetition of items makes it practical.

Among the newer uses of mechanized office procedure reported to Railway Age are many in which the use of punched cards is featured. Punch cards and the machines which do the punching, sorting, tabulating and printing are being used for freight and pas-





senger accounting, payroll, freight station, and freight claim accounting, as well as in other work in other departments. Machines are now available which have improved or can improve these processes, such as sorters which work at a speed of 650 cards per minute, and tabulators with increased speed, more flexibility and greater carriage control. There are electronic calculators that may be used in freight revenue accounting for automatically applying verified division percentages, extending the proportions to each carrier and then preparing the abstracts mechanically.

Some carriers, in order to make further economies from the use of the punch card system, also have arranged to interchange their cards used in prorating freight revenues, making it possible for the billing carrier to use the cards in many instances to verify the settlements automatically. Interline passenger settlements are also being rendered from punch cards by many railroads. Another place where the punch card method has been used advantageously is in car accounting, and in preparing operating statistics and per diem payments, and also in loss and damage freight claim accounting. In the latter case, an economical means for analyzing losses is provided, prompt settlement of claims is speeded, and the necessary statistics for the use of loss and damage prevention personnel are made readily available.

Manufacturers have recently brought forth ticket printing and issuing machines which are the results of several years of research and the expenditure of considerable sums of money. The principle of these machines is to issue card tickets from blank stock to many different destinations by name. Their use obviates the need for preprinted local ticket stock. Like-

wise, the numerous' steps necessary in controlling the old type printed ticket stock are eliminated. Both the ticket sellers' and the agents' local reports are made automatically, as a by-product, by these machines. When they are used no ticket whatever exists until it is bought and paid for. It has been estimated that the savings in preprinted ticket cost alone will repay the cost of the machine in a short time.

Another machine that has been developed for ticket agencies is a ticket accounting machine. On this machine, basically a cash register, all transactions handled by the agency are put through the machine and a mechanical debit is established against each ticket seller and against the agent. A mechanically correct and printed report by many classifications of revenue is provided, such as local tickets, interline tickets, federal tax on railroad ticket sales, Pullman tickets and the federal tax on them, conductors' and stewards' deposits, and miscellaneous collections. Locked up in this machine is a sealed, carried-forward total of all debits incurred since the previous check by the ticket auditor.

Microphotography in the railroad industry has been expanding rapidly and every day new uses are being found for it in accounting and auditing procedures as well as in many other fields. Even so, the fullest extent of its potentials as an aid in accounting work is still to be realized and is limited only by the ingenuity and thoroughness with which it is investigated and applied.

The consensus among the manufacturers of office equipment indicates that the railroads have done a fine job in mechanizing their office routines but that it is only a beginning and in the years to come a great deal more will be necessary.

Offices and Stations—and the 40-Hour Week

The inauguration on September 1 of the 40-hour work week for non-operating employees posed many problems for the railroad industry, but its effect on the public is principally in the curtailment of services at freight and passenger stations and ticket offices. Railway Age asked representative railroads how they planned to cope with the 40-hour week in those services with which the public most frequently comes into contact. The responses to this survey follow:

Atchison, Topeka & Santa Fe.— This road will close freighthouses on Saturday and Sunday. It also will close city ticket offices and minor stations on those days. Except where it is impractical, general and traffic solicitation offices will be closed on the week-end.

Atlantic Coast Line.— All freighthouses will be closed on Saturdays and the long established policy of keeping freight stations closed on Sundays will be continued. Passenger stations will not be closed on the week-end, but city (uptown) ticket offices will be closed. Supervisory personnel in the general and traffic solicitation offices, with a limited number of steno-

graphers to be worked on a staggered basis, will continue to function on Saturdays and Sundays, as before.

Baltimore & Ohio.—Freighthouses will be closed on Saturdays and Sundays except in larger cities, communities where large industries make regular shipments on Saturdays and at points where quantities of perishable commodities are ordinarily handled on Saturdays. The general policy also will be to close passenger stations and ticket offices on the week-end. Exceptions are passenger stations in larger cities and in other communities where an operator has to be on duty and where he also handles ticket sales. City ticket offices in larger cities will be closed and passengers will be referred to the ticket offices in the passenger stations during week-ends. General and traffic solicitation offices will be closed on Saturdays and Sundays. The policy probably will require additional employees, but some week-end duties may be handled by having regular employees work overtime, by rearranging days off for regular employees, or by other means not requiring the employment of additional people.

Boston & Maine.—In general, freighthouses will be closed on the week-end. Important exceptions are transfer houses at Boston, Mass., Holyoke, Portland, Me., Lawrence, Mass., and Mechanicville, which will work Saturdays only to do less-than-carload transfer work. Most ticket offices will be closed on Saturdays and Sundays, although stations will be left open for use of waiting rooms. Exceptions will be the major terminals, such as Boston, Portland, Lowell, Lawrence, Fitchburg, Nashua, Manchester and Concord. The general and traffic solicitation offices will be closed completely on week-ends.

Central of Georgia.—General policy will be to close freighthouses on Saturdays and Sundays, but there will be exceptions. Passenger stations and ticket offices will not be closed on week-ends, but traffic solicitation offices will be placed on a skeleton basis. Some departments in the general offices also will be placed on a skeleton basis; other departments, where circumstances permit, will be closed completely.

Central of New Jersey.— Some smaller freight stations will be closed entirely on Saturdays. Carload freight will be accepted, on notice, at some larger stations, which will have one or two men on duty. Agents will be brought into some of the larger stations when necessary to handle carload, emergency or perishable freight. Smaller passenger stations will be closed but the larger ones will be kept open. General offices will be closed on week-ends, although supervisory personnel may work.

Chesapeake & Ohio.— This road has 303 freighthouses, 149 of which will be closed on Saturdays and Sundays. The other 154 will be closed for l.c.l. but open for carload shipments. General policy will be to close passenger stations on week-ends, but those at large points, such as Huntington, W. Va., and Charleston, will be kept open. General and traffic solicitation offices will be closed. The locomotive shops at Huntington and car shops at Raceland, Ky., which do heavy classified repairs, will go on a straight 5-day week. Shops doing light servicing and running repairs will be on a staggered 7-day basis.

Chicago, Burlington & Quincy.— It has not yet been determined whether there will be any important exceptions to the general policy closing freighthouses on Saturdays and Sundays. City ticket offices will be closed.

Chicago, Indianapolis & Louisville.— In general freighthouses will close on week-ends, although they will open to handle special business. City ticket offices will be closed and general and traffic solicitation offices will be closed to the greatest extent permitted by conditions. The Monon estimated that it will be required to employ 50 additional workers because of the 40-hour week.

Chicago, Milwaukee, St. Paul & Pacific.— Freighthouses generally will be closed Saturdays and Sundays, with skeleton forces at larger stations. City ticket offices, surburban and minor stations will be closed. Skeleton forces will man the operating department in the general offices; other departments will be closed tight.

Delaware, Lackawanna & Western.— At most freight stations no employees will be on duty on Saturday. Exceptions will be made where industrial shipping necessitates completion of carload billing on that



FIVE DAYS OFF IN 6½ YEARS — In six and one-half years of handling 20,000 cars a year, this General Electric 45-ton Diesel-electric switching locomotive on the Alabama, Tennessee & Northern missed only five working days. During that period, in which the unit averaged 2,400 hours of operation annually, expenses are said to have averaged 31 cents an hour for fuel and maintenance material costs. Purchased in the summer of 1941, the switcher was shopped for its first overhaul early in 1948. The A. T. & N. reports that maintenance material costs from September, 1941, through January, 1948, were \$1,135.59. Then through July, 1948, maintenance material costs, including the overhaul, were \$1,209.70. During an average year fuel costs were about \$300. As reported in Railway Age on January 1 and 15, the St. Louis-San Francisco has just been authorized to acquire control of the A. T. & N.

day. The larger passenger stations will be open seven days a week, but many smaller passenger stations that have been closed on Sunday also will be closed on Saturday. General offices will be closed on week-ends. About 600 additional employees will be required for all types of forces as a result of imposition of the 40-hour week.

Denver & Rio Grande Western.— Freight ware-houses will be closed Saturdays. Freighthouse offices at more important points will operate with skeleton forces to handle carload traffic, diversions and reconsignments. City ticket offices at Denver, Colo., and Salt Lake City, Utah, will close on Saturdays, as will "one-man" country stations. Larger country passenger stations will be open Saturdays with skeleton forces. General and traffic solicitation offices will be on a skeleton basis. This road's preliminary estimate is that 40 additional clerical, station and freighthouse employees will be required.

Erie.— Freighthouses will be closed week-ends, except for l.c.l. transfers. Except in large cities passenger stations and ticket offices will be closed. General and traffic solicitation offices will close completely. An estimated 189 additional employees will be needed.

Grand Trunk Western.— Except for emergency and seasonal traffic, freighthouses will be closed week-ends. Small passenger stations will be closed, but larger stations will remain open. In most places where 24-hr.

service exists it will be continued. General and traffic solicitation offices will be closed. Approximately 75 ad-

ditional employees will be required.

Great Northern.— General policy will be to keep skeleton forces at larger freight stations Saturdays, largely to handle through shipments and billings on carload freight. Smaller freight stations in most cases will be closed on Saturdays. Where operated exclusively as such, passenger stations will remain open. Small passenger stations will be closed. City ticket offices, on- and off-line, will be closed. General offices will be closed, although those now operating Sundays and holidays will apply that same basis to Saturdays. Temporarily, freight and passenger traffic solicitation offices will operate until 12:30 p.m. on Saturdays with skeleton forces.

Illinois Central.—Freighthouses and city ticket offices will be closed week-ends, as, generally, will be

general and traffic solicitation offices.

Kansas City Southern.—Freighthouses, without exception, will be closed week-ends. "Uptown" ticket offices will be closed, but at larger stations the forces will be staggered to keep ticket offices open on Saturdays and Sundays. General and traffic solicitation offices will be placed, on Saturdays, on present Sunday basis, i.e., only those clerical positions now worked Sundays will be worked Saturdays.

Long Island.—This road has been on a 40-hour week since July 1. Large passenger stations remain open with relief help. Some smaller passenger stations have been closed or put on a part-time basis. Of the road's few separate freight stations the smaller ones are handled by agents and whatever is done about the smaller passenger stations will apply also to freight

stations.

Louisville & Nashville.— Freighthouses will be closed Saturdays and Sundays, except at more important freight stations to handle seasonal and emergency carload business. In general, passenger stations and ticket offices will be closed Saturdays, except at train order stations where an agent-operator is required. General and traffic solicitation offices, except for officers and office forces not coming under organization agreements, will be closed. Tentative indications are that 300 additional clerical, station and freighthouse employees will be required.

Maine Central.—The only exception to general closing of freighthouses on week-ends will be the transfer house at Portland, Me., which will work Saturdays only to do l.c.l. transfer work. Most ticket offices will be closed, although most stations will be open for use of waiting rooms. Important exceptions will be major stations, such as Portland, Augusta, Waterville and Bangor. General and traffic solicitation offices will be

closed completely.

Minneapolis, St. Paul & Sault Ste. Marie.—Freighthouses will be closed, except to handle perishables and for emergencies. Except where agents are required for operating reasons, passenger stations and ticket offices will be closed, as will general and traffic solicitation offices.

Missouri Pacific.—No l.c.l. freight will be handled Saturdays and Sundays, but carload freight will be billed at stations in larger cities. Passenger stations will observe the same hours on Saturdays as now prevail on Sundays. In larger cities where ticket offices

are maintained, such as St. Louis, Mo., they will be closed Saturdays.

New York Central.—Larger passenger stations will operate the same hours as before. The smaller, 1- and 2-man stations generally will have shortened Saturday hours or be closed entirely. As for freight, carload and perishable shipments will be handled with no change. L.c.l. will not be received or delivered on Saturdays.

New York, Chicago & St. Louis.—In virtually all cities served by the Nickel Plate freighthouses will be closed Saturdays and Sundays. Freighthouses will be kept open on those days only for emergency handling of perishables and other items requiring immediate movement. Passenger stations and ticket offices will be closed at all smaller points. General and traffic solicitation offices will be closed. Arrangements have been made to route urgent calls so that matters requiring immediate attention may be handled. Approximately 125 additional clerical, station and freighthouse em-

New York, New Haven & Hartford.— About 90 ticket offices and 235 freighthouses in this road's territory will be closed week-ends. Passenger stations where business is heavy on Saturdays and Sundays will remain open on a 7-day basis and in the larger cities, such as New York, New Haven, Conn., Hartford, New London, Waterbury, Bridgeport, Boston, Mass., Worcester and Providence, R. I., employees will be available to deliver perishable and carload freight. Checked baggage will not be handled at closed passenger stations. Timetables will be posted in or outside ticket offices to be closed week-ends so the traveling public can obtain information about trains. General offices will work on Saturdays with skeleton forces.

Northern Pacific.— General policy will be to close freighthouses on Saturdays and Sundays. Small passenger stations will be closed unless an operator is necessary for train operation. Uptown ticket offices, as

well as general offices, will be closed.

Pennsylvania.— Smaller passenger stations will be closed. At larger passenger stations, ticket windows and other public services will remain available on Saturdays and Sundays. Where it is practical to do so at freight stations, bills of lading will be issued for carload shipments to patrons who desire to load such shipments on Saturdays, although other business, except the waybilling of such shipments, will not be transacted on that day.

Reading.— Freighthouses generally will be closed Saturdays and Sundays, except for some principal stations which will remain open Saturdays. Only principal passenger stations will remain open, but with restricted hours, where practical. General and traffic solicitation offices will be closed completely, where practical. About 775 additional clerical, station and freighthouse em-

ployees will be required.

Southern.— Although larger transfers will be kept open, in general freight stations will be closed weekends. Some ticket offices at small stations will be closed. General offices, it is contemplated, will be operated with skeleton forces.

Texas & Pacific.—In general freighthouses will be closed Saturdays and Sundays. City ticket offices and general offices will be closed. Approximately 50 additional clerical, station and freighthouse employees will be required.

Fitting the Locomotive to the Job

A few simple rules for determining in advance what kind of Diesel-electric locomotive is required to meet a given set of operating conditions

By G. T. BEVAN Alco-G.E. Division of the General Electric Company, Schenectady, N. Y.

orty-five per cent of the total operating expense of a railroad is affected by the character of motive power used. Consequently, very careful consideration should be given to the proper selection of locomotive power. From a strictly engineering viewpoint, a locomotive should be purchased as "a tool to fit the job," while from an economic standpoint it is quite obvious that a complete cost study should be made before finally selecting the type of power.

This approach of "fitting the tool to the job" in the selection of Diesel-electric power-as compared to the prior practice wherein steam locomotives were purchased and tested afterward with a dynamometer car to determine their hauling capacity-is now generally offered by the locomotive builders. This practice not only fits the correct Diesel-electric locomotive to the job, but also determines the economics involved, from an initial investment standpoint as well as from an annual operat-

ing expense comparison. With the advent of the Diesel-electric locomotive, a new approach to train operation had to be established. The Diesel-electric can be overloaded to the point of damaging the electrical equipment, if tonnage and grade conditions reduce the speed below a given continuous speed. This is not true of steam operations; a steam locomotive can be overloaded to the point of stalling without damage. It became necessary, therefore, for the Diesel-electric manufacturer to establish a continuous, as well as a short-time, tonnage rating for any particu-

lar locomotive application.

Speed-distance curves enable the engineering and economic aspects of a given application to be readily understood. This graphical analysis is used as a basis for determining the fundamental application. It is the calculation of the operation of a train of predetermined size and weight at a certain speed over a given profile, in such a way that the complete running time as well as the continuous speed is obtained. A typical speed-distance curve is shown in Fig. 1. From this basic information it is quite feasible to determine the economic aspect of a Dieselization proposal, inasmuch as the total fuel consumption is readily obtained.

Before recommending a particular size of locomotive unit, it is necessary to determine the axle loading in order to permit a safe rail loading on the track structure. Excessive axle loading not only will cause rail and roadbed damage, but also will result in unsafe operation. In selecting the proper size of locomotive, the following data, giving the axle loadings permissible for different weights of rail, are helpful: Rail Weight

Maximum Axle Load per Lb. of Rail Weight 500 lb. 600 lb

For example, a 100-ton, 4-axle locomotive will operate safely on 85-lb. rail where the permissible loading is $85 \times 600 = 51,000 \text{ lb.}$

Tonnage Ratings

The next preliminary investigation is to determine the size of locomotive necessary to handle a given tonnage over the designated profile at a selected speed. Knowing the grade, curve, and train resistance and the tonnage to be hauled, the locomotive tractive force and horsepower can readily be obtained. Let us assume a ruling grade of 1 per cent, a maximum curve of 4 deg., a train resistance of 4.8 lb. per ton, and a freight tonnage of 70 cars at 40 tons per car. The total train resistance is the algebraic sum of the grade, curve, and train friction resistances. In this case, the train resistance is 20 + 3.2 + 4.8 = 28 lb. per ton.

The continuous tractive force of a typical singleunit 1,500-hp. (115-ton) road locomotive, geared for a top speed of 65 m.p.h., is 42,000 lb. Thus, knowing the locomotive weight, the required tractive force can be derived from the following:

Tractive force = Train resistance x (Train weight + Locomotive weight) Train weight = Train resistance - Locomotive weight Tractive force =42,500 - 11528
=1,400 tons (trailing)
= 35 cars at 40 tons per car

Since one unit can handle 1,400 tons, a 3,000-hp., 2unit locomotive will handle the specified 2,800-ton train. The speed over the ruling grade will be 11.0 m.p.h., as shown in the characteristic curve for this locomotive.

Should it be desired, however, to handle a 1,400-ton train over the ruling grade at a speed between 25 and 30 m.p.h., a 3-unit, 4,500-hp. locomotive would be required. The tractive force would be:

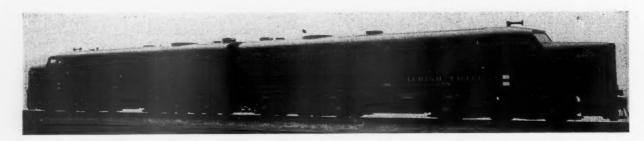
Tractive force = 29.5 (1,400 + 345) = 51,590 lb.

This gives a speed over the grade of 27.5 m.p.h. as noted from Fig. 2. In this case, the running adhesion is

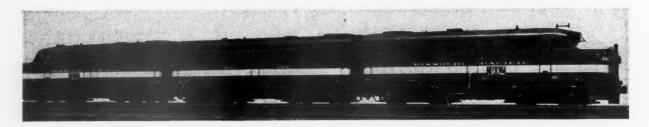
This article is a condensation by the author of a paper presented at the 1949 winter general meeting of the American Institute of Electrical



Alco-G.E. 1,500-hp. road-switcher locomotive



Alco-G.E. 2,000-hp. (2-unit) road passenger locomotive



Alco-G.E. 4,500-hp. (3-unit) road freight locomotive

comparatively low allowing minimum wheel slipping. The adhesion factor for a locomotive operating under these conditions is:

$$\begin{array}{c} \text{Adhesion factor} = & \text{Required tractive force} \\ \hline & \hline \text{Weight on drivers, (lb.)} \\ = & \hline 51,500 = \\ \hline & \hline 345 \times 2,000 \\ \end{array}$$

The maximum running adhesion value with a dry, clean rail in good condition should not be over 20 per cent. Rail that is wet or in poor condition will necessitate the use of lower adhesion value.

On relatively short grades over a rolling profile, the kinetic energy accumulated running down grade can be used to assist the train over the next ascending grade. After the momentum has been completely, used up, it may be necessary to demand a locomotive output considerably higher than the continuous rating of the traction motors for a short time until the summit of the

grade is reached. In this case, a shorttime or overload rating may be used, provided, of course, that the adhesion factor of 20 per cent is not exceeded.

As an example, consider a rolling profile in which a ruling grade of one per cent for two miles is such that momentum operation could be employed. Assuming the curve resistance at 4 lb. per ton of train weight, the continuous tonnage rating with a 4,500-hp., (345 ton) locomotive would be:

Assuming 50-ton cars, this equals a 95-car train. Since the grade is only two miles in length, the short-time overload rating up to the slipping point (20 per

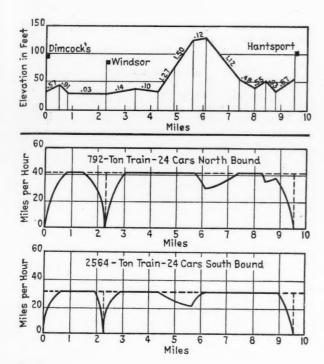


Fig. 1

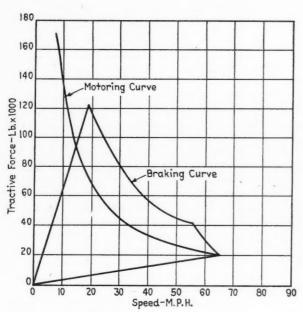


Fig. 2

cent) could be used. In this case, the momentum of the train would be considered run out in a train length of approximately 4,280 ft. (95 cars x 45 ft. length per car). Therefore, a distance of 6,280 ft., 1.19 miles is left to climb, in which the short-time rating could be used to advantage. At 20 per cent adhesion, the tractive force available is 0.20 x 345 x 2,000 or 138,000 lb. The trailing tons that could be handled over this grade on a short-time basis is:

$$\frac{138,000}{20+1+4}$$
 -345 = 5,175 tons or 104 fifty-ton cars

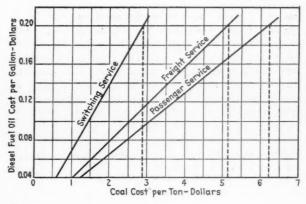


Fig. 3

Fig. 1—Condensed profile and speed-distance curves (freight service) for an Alco-G.E. 2,000-hp., 2-unit locomotive. Speed restriction is shown by broken lines

Fig. 2—Tractive force and braking curves for a 4,500-hp. Diesel-electric locomotive

Fig. 3—Comparison of fuel cost for steam and Diesel-electric

The time on the grade at the short-time rating would be:

Referring to Fig. 2, it is seen that the speed over the grade at the short-time tractive-force rating is 9.5 m.p.h.

The capacity of a Diesel-electric locomotive is expressed in two ways, the continuous rating, and the short-time rating. The short-time rating is actually a 1½-hour rating based on the temperature rise of the motor windings. Where the grades require over 90 min. to ascend with a given train, the continuous ratings must be used, otherwise the temperature rise will be excessive with consequent damage to the motor windings and insulation.

Horsepower and Fuel Consumption

By taking increments of the speed in accelerating a specified train, the time in seconds can readily be obtained. From this, the increment distance can be calculated. Thus, increment horsepower is obtained from the formula:

$$H_{P} = \frac{T.F. \text{ (lb.)} \times M.P.H.}{375}$$

When the increment values of horsepower and time are known, the horsepower hours can be quite easily calculated. The total fuel consumption for a given operation can be obtained if the Diesel-engine fuel rate is known. The speed-distance-time calculations and plotting of the data will give a complete history of the train movement.

One salient feature of the Diesel-electric locomotive

that is of great value in mountainous territory is the dynamic brake, which uses the traction motors, acting as generators, to retard the train when descending heavy grades. On long, heavy, down-grade movements with steam operation, the air-brake retainer valves on the individual cars must be set before going down grade. This necessitates a stop at the top of the grade. If the grade is long and severe, two or three intermediate stops will be required to cool the brake shoes and wheels. One western railroad has indicated that, prior to the use of Diesel-electric locomotives, 2,500 wheels per month were removed because of brake burns. Likewise, a considerable saving is realized by the elimination of the wear and replacement of brake shoes. The dynamic brake is much more reliable and results in safer operation, since the wheels and brake shoes do not become overheated.

As a general rule, Diesel-electric locomotives with dynamic braking can satisfactorily handle the same tonnage train either up or down grade. As a typical example, reference to the dynamic braking curve in Fig. 2 indicates that a 1,650 trailing-ton train can be handled down a 3 per cent grade with 6 deg., curves assuming 4.2 lb. per ton train friction. The total train resistance is the algebraic sum of the grade, curve and train friction, or:

-60 + 4.8 + 4.2 = -51 lb. per ton
(Train weight + Locomotive weight) x total resistance = Braking
force
1,650 + 345 x 51 = 101,745 lb.

The braking curve, at 101,745 lb. braking force shows a speed of 15.5 m.p.h.

In handling the same train up the grade, the tractive force required will be:

 $(1,650 + 345) \times 60 = 137,500 \text{ lb.}$

When exerting the tractive force of 137,500 lb., locomotive speed will be 9.5 m.p.h. as shown in Fig. 2.

Analysis of Operating Expense

With a working knowledge of the train schedules and projected use of Diesel-electrics in place of steam locomotives, the economics of the application can be determined, provided that additional data are available relative to the cost of operation. This information requires a complete breakdown of those operating expenses that are affected by motive power operation. Railroad accounting classifies these expenses in eight different items as shown in the table. The largest saving of the Diesel-electric, compared to the steam, is in fuel expense. The reason is that the Diesel-electric has a thermal efficiency at the wheels of 25 per cent, whereas the corresponding figure for a modern steam locomotive is only 5 per cent.

Figure 3 shows the comparison between the costs of Diesel fuel oil and coal. The recent increases in fuel-oil cost have been paralleled by a corresponding increase in coal cost, so that the advantage of using fuel oil remains the same under the present price level. The savings in fuel cost with Diesel-electric operation may run as high as 60 per cent, depending, of course, on the relative prices of coal and oil.

Should the price of Diesel fuel oil advance to 20 cents per gal., the cost of coal per ton for use in steam freight service would have to be \$5.20 to match the fuel oil cost. Any price higher than \$5.20 would favor

Steam vs. Diesel Locomotive Operating Costs—Freight Traffic Branch Line Service

14,455.10
38,056.80 18,592.42 14,455.10
38,056.80 18,592.42 14,455.10
18,5°2.42 14,455.10
14,455.10
8,152.40
4,272.00
6,386.00
0,323.25
0,228.77
0.110
Annum
2,720.00
0,686.00
4,068.00
4.272 00
4,240.00
0,323.25
6,309.85
10

First Cost—Seven 1,500-hp. Diesel-electric road switchers... \$920,500.00 Gross return on investment 34.1 per cent.

the Diesel fuel cost and result in a saving over steam operation.

The second item reflecting a saving is the locomotive repair account. Steam locomotive repair cost is, on the average, approximately 10 per cent to 40 per cent higher than that of the Diesel-electric, depending upon the age of the steam motive power. The necessity of removing flues every four years, as well as costly firebox repairs, accounts for the increased maintenance on steam locomotives.

Enginehouse expense is the next item of comparison in which the Diesel-electric shows direct savings over steam operation. This expense covers the routine work at a terminal required to prepare a locomotive for its next run, including the cost of wiping and cleaning the locomotives, cleaning fires, dumping ashes, fire watching, and removing ashes.

The remaining items chargeable to locomotive operation include enginemen's and trainmen's wages, water, lubrication, and other supplies. With the exception of water account, which is considered negligible, these costs are approximately the same for Diesel operation, since the amount used for Diesel engine cooling and train heating is insignificant compared with that consumed in steam-locomotive operation.

A typical comparison of these eight items for steam and Diesel-electric operation for branch-line service is shown in the table.

Conclusions

The Diesel-electric, by its ability to produce round-the-clock performance, to operate in locations where water is hard to treat, and to eliminate costly engine-house and other terminal inspections necessary with steam locomotives, has revolutionized the railroad industry. This newer type of motive power also has reduced, in many cases, the need for helper-locomotive service over mountainous routes. For these reasons, the application of Diesel-electric locomotives to the railroad field has proved to be economically justified.



One of 650 Army locomotives, of which 90 per cent are Diesel-electric

MAINTENANCE OF ARMY EQUIPMENT

An outline of the facilities and organization established for keeping railroad equipment in condition

By COL. HARRY E. OWENS*

The Department of the Army Transportation Corps inventory of equipment reveals 4,500 cars of all descriptions other than tank cars; a fleet of 3,000 tank cars in interchange service; 300 locomotive cranes and 650 locomotives ranging from 25 tons to 131 tons. Ninety per cent of the latter are of the Diesel-electric type. These figures not only give a picture of the equipment, but also a conception of the maintenance involved. This responsibility is assigned to the Railway Transport Service Division, Office of the Chief of Transportation. The actual operation, on-the-spot supervision and field maintenance are now the responsibility of the Army commanders in their respective areas.

Considerable Army railway equipment is located at camps, posts and stations throughout the United States and of necessity is at centers of industry and major ports on the Atlantic and Pacific Oceans. Successful staff supervision of this operation and the efficient maintenance of the Army equipment within

these installations are a task of considerable magnitude which requires constant expert supervision. The problem is complicated by the fact that much of the equipment must be in small groups ranging from one to six or eight locomotives and locomotive cranes.

Division of Responsibility

The replacement value of the Army railway equipment today is estimated at approximately \$90,000,000. The local spot supervision is actually accomplished by a transportation officer assigned to the staff of the Army commander of each post, camp or station, to whom has been assigned certain definite responsibility delegated through the Army line of command by the chief of transportation. However, base maintenance of equipment and records of both organizational and field maintenance are still the responsibility of the chief of transportation and this is delegated to the Railway Transport Service Division, Office of the Chief of Transportation.

From the vast accumulation of experience certain

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maintenance terms and definitions have been adopted.

Organizational Maintenance (formerly known as First and Second Echelon Maintenance) is the local responsibility of the commanding officer of the installation, as previously explained. Organizational maintenance includes engine-terminals service, fueling, lubrication, inspection, wiping, cleaning and light one- to two-man adjustment and replacements.

Field Maintenance (formerly known as Third Echelon Maintenance) is the local responsibility of the transportation officer of the area in which the equipment is located. Field maintenance provides light to moderately heavy maintenance for power units beyond the capacity of the personnel and facilities of the local installations.

Field maintenance was previously accomplished by six Transportation Corps mobile railway repair shops, with headquarters at Baltimore, Md.; Granite City, Ill.; Atlanta, Ga.; San Antonio, Tex.; Ogden, Utah; and Stockton, Calif. It will now be handled by mobile shops to be established in appropriate locations in the individual Army areas, first to sixth inclusive.

Base Maintenance (formerly known as Fourth and Fifth Echelon Maintenance) is comparable to back-shop repairs as made by the railroads. This work will be performed by the Transportation Corps base shops at Camp Holabird, Baltimore, Md., and the Ogden Transportation Corps base shop at Ogden, Utah, or by contractual agreement with the railroads.

The actual accomplishment of the equipment-maintenance task under the new plan of execution has been in force for the past 12 months. The general procedures are as follows: Establishment of an adequately trained staff of inspectors to keep the Office of the Chief of Transportation advised at all times on the

actual conditions of each unit of railroad equipment. The inspector, on completion of an inspection of a unit, arranges a tentative mobile shop schedule of repairs. In cooperation with the supply officer of the installation, he prepares requisitions for required spare parts. In arranging the schedules, 90 days advance time is allowed for parts delivery. This plan has materially stepped up field maintenance and greatly relieved the spare parts supply problem.

Output Improved

During the fiscal year 1949 scheduling and production records at base repair shops show over 100 per cent increase in shop production of completed items (locomotives and locomotive cranes). This has been accomplished with only a 30 per cent increase in personnel. Better results are anticipated as the new plans develop.

Base maintenance scheduling is fixed on 90-day shop forecasts prepared by the Railway Transport Service Division. They are based on semi-annual inspection reports. The forecasts indicate the priority of equipment to undergo base repairs for periods in question. Copies of the 90-day forecasts are furnished base shops and supply units of the Supply and Facilities Division, Office of the Chief of Transportation, in order that they may be acquainted with the equipment for which parts and materials are to be supplied.

The postwar load of administrative work to activate and coordinate the new plan has placed considerable extra administrative work on the entire Division. This has been augmented by the effort to expedite the release of excess equipment and allocate the proper evaluation and distribution of usable inventory to the



One of the 7,500 cars of all descriptions owned by the U. S. Army, including a fleet of 3,000 tank cars

present and future service requirements. As a result the Army now has a motive-power fleet which is

practically all Diesel-electric.

During the fiscal year 1949 it was realized that the grace period was over and that the fiscal year 1949 budget would of necessity carry a relatively heavy load to cover deferred war maintenance. This adjustment is practically completed and the two Transportation Corps base railway repair shops are actually working on current motive power overhaul.

Twenty-six commercial car shops are working on rolling-stock rehabilitation. It was anticipated that by midsummer of this year all rolling stock and motive power will have been repaired and in a state of cur-

rent usable readiness.

n

Budget requests for Transportation Corps railway equipment maintenance for the coming years will be adjusted to meet normal demands of an established well-balanced inventory.

Base Maintenance Shops

The Holabird Shop at Baltimore, Md., is responsible for all base maintenance of railway equipment at posts, camps and stations east of the 100th meridian. In this shop, machine tools are being replaced as rapidly as budgets permit and plant changes have been planned accordingly. The new equipment includes, among other new items, a modern wheel lathe which completes the job of turning tires in less than one hour as compared to an eight-hour task with the old equipment. The new plan and this rehabilitation have contributed materially to the 100 per cent increase in production.

Another shop at the Ogden Arsenal, Ogden, Utah. is responsible for all base maintenance of railway equipment at posts, camps and stations west of the 100th meridian. Ninety per cent of its machinery has been modernized, installing the necessary new equip-

ment.

Railway Transport Service Division

There are three branches of the Railway Transport Service Division, the functions of which are as follows:

Operations and Equipment Branch — This branch exercises staff supervision over all departments of Army railroad operations and equipment. It is responsible for the readjustment and balancing of inventories. During the postwar period this included the readjustment of initial war inventories and the designation of new identifying descriptions for each unit. It also required new detailed reports on status of serviceability. The success of peacetime operation is dependent upon records and reports from field installations, a daily log of equipment location, cost records or organizational, field and base maintenance, consumption and cost of fuel and lubricants, and utilization and availability records of motive power and rolling stock. The appraisal of interchange has added materially to the division's work. Also, the work involved to accomplish the contractual portion of the maintenance mission by midsummer 1949 proved a major task.

The report and records named above are used as minimum basic requirements for budgeting purposes in order to maintain and hold in continuing readiness the Army railway equipment on a satisfactory peacetime service basis.

Railway Engineering Branch — This branch is charged with the compilation of studies of the characteristics of foreign railways, the determination of practical capabilities of railway lines involved in logistic studies, the equipment, fuel, supply and operating troop requirements for these same lines and the estimates for rehabilitation and new construction necessary to accomplish the operational objectives. In an advisory capacity, the branch submits recommended military characteristics for overseas motive power and rolling stock, fixes phased delivery requirements and maintains operational statistics of military railways in overseas theaters.

Within the Zone of Interior, the Railway Engineering Branch, from basic logistical plans, estimates the demands on specific domestic railroads and, based on operational plans developed, reviews and recommends action on railway construction plans at terminals, posts,

camps and stations.

The Troops and Services Branch — This branch is responsible for the implementation of the Department of the Army Affiliation Program as it affects the Military Railway Service units of the Organized Reserve Corps. It makes recommendations for personnel to be assigned to these units in accordance with a degree of support requested and furnished by the sponsoring civilian railroads. It is the responsibility of the Troops and Services Branch to initiate and recommend changes in tables of organization and equipment, tables of distribution, and tables of allowances so that the units of the Military Railway Service for which the Railway Transport Service Division has staff responsibility may be properly equipped.

This branch, in close cooperation with the Operations and Equipment Branch, prepares budget estimates and justification for inclusion in the Transportation Service Army budget for such items as personnel, travel, contractual services, supplies and materials for the necessary maintenance of Army rolling equipment.

Another important function of this branch is the review of manuals and publications prepared by the Transportation Corps School at Fort Eustis, Va., where selected personnel are trained in the use and maintenance of Military Railway Service installations.

New Maintenance Policy

A far-reaching change in the Army railroad operation was the adoption of a new policy to fit the peculiar needs of Army service. This resulted in the plan — termed "Shop-to-Locomotive" — of maintenance now used, which differs materially from the plan on American railroads where the "Locomotive-to-Shop" system is generally employed. In the new system, strategically located mobile shops under the control of the commanders of the armies are sent to facilities within the jurisdiction of the local army command to perform maintenance, other than basic overhaul, which is, of course, still accomplished in the base shops.

The results obtained from these various changes, are, to date, most encouraging and indicate that old methods must be kept abreast of new developments if railroad transportation is to maintain its leading position as the most important basic factor in any national defense plan.

CAREFUL SWITCHING-

What Is It? Is It Obtainable?

By JOHN W. BARRIGER, JR.
President
Chicago, Indianapolis & Louisville

Through careless and thoughtless switching, freight cars are forced to endure just the same intensity of shocks as though they were dropped by some giant Paul Bunyan an appreciable distance through space. If that actually occurred it would soon be stopped, because the sheer folly of such nonsense would be apparent and the damage understandable even to the most unobservant child. It may be, if we can adequately inform yard crews and yardmasters of some of the simple physical facts about the forces with which they are working, that cars will be switched more carefully.

Some very effective posters have been issued from time to time depicting the relative impact when cars moving at various speeds strike others standing on tracks. However, even these warnings leave something to be desired. The observer is impressed with the central fact that impact varies with the square of the speed, and the increase for each one m.p.h. increments from that base of one, raising the comparative destructiveness of the forces to 4, 9, 16, and so on to 100 for each 10 m.p.h., but he is not informed of what is the actual, rather than the relative impact at each speed and just how destructive it is.

Careful switching is a problem in the conservation of energy and of forces as well as of dollars. Possibly it is because railroad men become so accustomed to high speeds that they have too little respect or understanding of the destructive forces which heavy bodies represent when in motion, even at low speeds.

Railroads Deal in Forces

The force of gravitation is the primary determinant of weights. Forces are measured in terms of weights and speeds. Railroads primarily deal in forces because these must be produced by locomotives to overcome the various resistances which oppose the motion of trains. Great force must be generated in the operation of modern railroads which haul vast quantities of traffic long disstances at high speeds. All human progress is based upon the proper use of force from the most simple manual tasks to the running of great ships and long trains and huge factories which in their respective ways convert tremendous forces into useful work.

Forces can be destructive as well as constructive, sometimes purposely so, sometimes accidentally. The great present symbol for destruction is the atom bomb. It is not surprising to those who understand how forces are produced and used to hear that the world of science and technology believes that while it has not yet learned how to utilize fissionable elements to generate heat and power in controllable quantities for the constructive purposes of peace, this problem will be solved, possibly soon.

The quantion under consideration here is one of educating those in command of the railroads' mechanical forces to a better understanding of these forces so that their destructive consequences will be curbed without handicapping their most effective utilization. Railway employees understand the significance of weight and speed separately because both are distinctly perceptible, but they do not seem to have the proper comprehension of what their effect is in combination—particularly when the rate of motion is low.

Explosive Magnitudes

Two pieces of railroad equipment standing still are harmless, but let them collide at high speeds and the forces in each which must be dissipated are equal to those generated by a considerable explosion. Railroad men are fully aware of the destructiveness of the forces of cars and engines moving at high speeds because speed makes an impression upon them, and they respect it. However, they may overlook the damage that can also be caused by cars being brought to an instantaneous stop by coupling even at low speeds against others standing on a track.

Speeds within the rates at which men can walk or run do not impress yard crews as being fast. If they are not fast, they do not seem dangerous, and if they are not dangerous, there is a disposition to pay little attention to them. Men who are employed in train and yard service have seen so many freight cars survive, apparently unscathed, from coupling in switching at rates from 4 to 10 m.p.h., that they think little or nothing of collisions at that rate. Anything over 4 m.p.h. is a collision, although the proper maximum coupling speed is half of that, or 2 m.p.h. When one sees something happen repeatedly he becomes callous to it; he accepts it as one of the fixed conditions of life. Often the most earnest exhortation from official quarters fails to arouse

This article is adapted from an address in Chicago on August 19 at a meeting of railway operating officers arranged by the Chicago Claim Conference.

a man if he instinctively thinks the dangers, measured by his own observations, are exaggerations.

We cannot go out into the freight yards and hold classes in physics and mechanics, nor is there any reason to do so. However, we should interpret some of the basic facts about mechanical forces in a manner which will give switchmen a better understanding of the destructiveness of heavy freight cars in motion when they strike standing ones at other than the very slow speed of 2 m.p.h.

Velocities at the instant of coupling should be publicized at freight yards in terms of the forces which would be equivalent to those of a vertical fall producing an equal shock. If switchmen could be made to understand that when cars strike at speeds higher than 2 or 3 m.p.h., these collisions represent the shock equivalent of a considerable fall of the same weight, they will gain better understanding of the equipment and property damage that can be caused by careless switching. The present loss and damage bill proves that this is a subject inadequately understood by the men who actually shift the cars.

These observations have referred to the destructiveness of uncontrolled or inadequately controlled forces and have pointed out the paradox of the switchmen's usefulness and destructiveness of the same thing. This Dr. Jekyll and Mr. Hyde set of antithetical characteristics can be found in almost everything. Life-giving rains of one day become destructive floods of the next; fire is both the most useful servant of mankind and his most cruel enemy. One could extend the list indefinitely. We all know the useful and constructive purposes which railways play in our daily life and their vital role in the continued development of the nation, but that should not make us indifferent to their shortcomings.

Error Need Not Be Endured

The loss and damage toll of the property of others entrusted to railway care for transport, and of their own property, too, is a distressing contrast to the many achievements they have made. Loss and damage has too long been something taken like the weather, and, as Mark Twain once observed, "Everyone talks about it, but no one seems to do much about it." Loss and damage

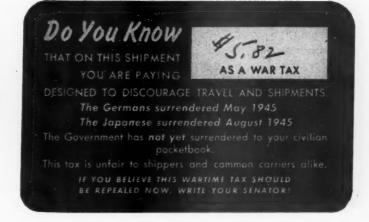
is not like the weather, imposed by natural forces beyond the control of an individual. It is something that every railway operating officer can do a great deal about. It cannot, however, be corrected by words alone, however eloquently we may exhort one another on this timely subject, but only through minutely close supervision, not alone by supervisors, but of supervisors. This will require continuous education in terms which will register deeply upon the average railroad man and vitalize the accomplishment of this objective.

We train men to improve their skill and workmanship in many phases of railway maintenance and office work. Why not include that highly important but neglected branch of railroad work—careful switching? Some important preliminary steps have been taken to inform and inspire personnel to switch cars carefully. Splendid motion pictures are being shown on several railroads relating to this subject and meetings are being held, but does the point of these warnings register on the men?

National advertisers do not fire just one broadside, however effective it may be, but they keep hammering away at the same subject—interestingly, entertainingly, differently. We must do the same in reference to careful switching. We cannot achieve careful switching merely through orders and instructions, important as these may be. It can be done through the methods of a sales campaign. We must merchandise the idea of careful switching among our employees. Fortunately, it's a great idea, and it should be easy to sell. It is being assisted by all of the recent important technical developments in Diesel switching locomotives and yard switching, signal and communication facilities. All of these are making it easier for yard crews to switch cars carefully.

Probably one barrier to doing so in the past has been a notion that careful switching means slow switching. It means no such thing, but it does require intelligent and observant switching with the work of every member of the crew properly coordinated. That is team play. That must become the spirit of the day on the railroads as well as on the diamond and the gridiron. Teams, however, require coaches to train them to win; careful switching, therefore, needs that essential ingredient of success in every activity—leadership. Fortunately, the railway industry is richly endowed with it. The game is in our own hands; surely we can win it.

The Colorado Fuel & Iron Corp., Pueblo, Colo., has prepared gummed stickers setting forth its opposition to continuation of federal excise taxes on transportation. Stickers, like the one illustrated, are affixed to waybills





The Missouri Pacific "Booster" clubs' sales program was introduced to employees (above) at "on-the-job" meetings. Weekly posters (right) are used to stimulate transportation sales by employees



M. P. "Boosters"

Go After More Traffic 40,000 Strong

The Missouri Pacific is bolstering both its freight and passenger business by a system-wide sales promotion program wherein 40,000 members of its employee "Booster" clubs have been enlisted as aggressive transportation salesmen. Less than a week after initiation of the campaign, the railroad's traffic department reported receipt of many "tips," resulting in a substantial number of ticket sales and a gratifying amount of freight traffic from unexpected sources.

The program — a Booster club idea from the outset — is planned as a summer activity to offset the downward trend in railroad business accompanying the return to a "buyers'" market. The Boosters confine their "selling" of M. P. service to relatives, friends and acquaintances who are potential travelers and shippers. The work is voluntary and the subject of passenger and freight service is brought up only when it presents itself naturally during everyday contacts.

Information about potential new business is relayed to appropriate departments by the use of so-called "tip" cards on which are recorded pertinent data about prospects. A traffic representative then "follows up" the tip with a view to selling M. P. service.

The "Chief" Boosters of the railroad's 59 clubs launched the program at introductory sales meetings, employing a 64-page "idea chart" to stimulate employee thinking. The meetings were conducted in offices, shops, roundhouses, freight stations and at various other points, with a minimum of work interruption. At the conclusion of the introductory sessions, each employee was given a booklet titled "Tell 'Em and Sell 'Em," which is a reproduction of the entire contents of the larger chart. Different posters are now being displayed weekly throughout the 11,000-mi. system, pointing up additional ideas to facilitate sales by employees.

As a further sales adjunct, employees in the larger cities served by the M. P. are given folders listing fares and costs of various accommodations from their respective cities to some 100 other on-line and off-line points. The sales program is also being supported strongly by the 35 women's clubs which are auxiliaries of the Booster clubs.

I.C.C. Approves New Pullman Agreement

Cost allocations modified in uniform service contract

Division 3 of the Interstate Commerce Commission has approved the new uniform service contract which was agreed upon by the Pullman Company and interested railroads in order to modify arrangements for the allocation of Pullman's operating expenses. The new contract, which will be made effective as of July 1, was negotiated because several roads were dissatisfied with the previous allocation plan, the dissatisfaction relating principally to the apportionment of Pullman's expenses on a car-days-operated basis.

"The plan," the commission's report said, "was considered unfair to railroads whose sleeping-car business was largely confined to overnight runs and preferential of others with longer passenger hauls requiring more or less continuous use of sleeping cars and consequently heavier operating expenses per day." The new allocation provisions were based on an "extensive cost analysis of Pullman's operations," the report added. Its brief explanation of them read as fol-

lows:

"It is now proposed to divide Pullman's operating expenses into 10 principal categories or cost-groups and a number of sub-categories, and relevant units of service are assigned to each group. The . . . contract contains price tables for each unit of service in each category of expense, and expenses will be allocated to each individual railroad by applying these prices to the service units actually developed on that railroad. In some instances car-days would continue to be used, but there would also be other service units appropriate to the particular service, such as car-miles, employee-days, employee-hours, passengers-carried, and car-departures."

Division of Profits

Other changes made by the new contract were listed by the commission as follows:

(1) Net profit from sleeping-car operations on an individual railroad will be shared with it on the basis of 75 per cent to the railroad and 25 per cent to Pullman instead of on the present basis of 50 per cent to each.

(2) The railroad's share of profit will be computed before deduction of Pullman's 3 per cent return on working capital and depreciated investment in cars and other property. At present Pullman's 3 per cent return (based on Pullmanowned cars only) is deducted before the amount of profit to be shared with the railroad is determined.

(3) If Pullman's share of the profits from sleeping-car operations on a given railroad is less than such railroad's proportion of a 3 per cent return on Pullman's working capital and depreciated investment, or if the operations result in a loss, the railroad will pay to Pullman the amount necessary to provide the 3-per cent return. Under the present contract Pullman receives a 3-per cent return on its depreciated investment in cars (not on other property or working capital) only if earned.

(4) Each railroad will pay the entire cost of yard electrical maintenance (car-lighting and air-conditioning apparatus) of cars operated on its line. Under the present contract car-lighting maintenance is a pooled expense, and 75 per cent of air-conditioning cost is paid by the railroad and 25 per cent by Pull-

man.

(5) Empty cars will be hauled and switched for delivery to other railroads free of charge. Under the present contract free empty hauls are made only on the route of a previous or future loaded haul, and switching charges are assessed against the carrier to which the cars are delivered for revenue service.

(6) Cars owned by Pullman which are destroyed or damaged beyond repair will be paid for in accordance with the rules now governing settlements for such losses by the railroads instead of on the basis of depreciated ledger value or scrap value, whichever is higher, under the present contract.

In closing, the report said that "in general" the Pullman pooling arrangement "has proved satisfactory" to all parties in interest. "Pullman," it added, "now operates 6,279 sleeping and parlor cars, of which 39 per cent are owned by it and the remainder are leased from the railroads. In the next three years it plans to spend \$10,000,000 for the improvement of its facilities and equipment. Under their contract rights to purchase heavyweight cars assigned to the not later than December 31, 1948, the railroads bought from Pullman 2,396 standard sleeping cars and 152 tourist cars."

Would Have I.C.C. Prescribe Rules for Leasing of Trucks

Prescription by the Interstate Commerce Commission of rules and regulations governing the leasing and interchange of motor vehicle equipment by motor common and contract carriers has been recommended in a proposed report by Examiner Henry C. Lawton. The rules proposed by the examiner would give the railroads and the Railway Express Agency the most important exemption which they sought, i.e., relief from a provision requiring that drivers of



Twenty-four future farmers, all winners in the cooperative Future Farmers of America forestry program, were guests of the Raleigh, N. C., Lions Club in a recent program sponsored by the Seaboard Air Line. As G. B. Rice (second from left), vice-president, S.A.L., looks on, L. Y. Ballentine (left), presents certificates and bonds to three top winners: Ray Rauton, South Carolina's state forestry winner from Johnston; Jerry Price, Monroe, N. C.; and Aubrey Bradshaw, Ridgeway, Va.

leased vehicles be made employees of the lessee carrier.

The proposed report is in Ex Parte No. MC-43, the general investigation instituted by the commission's Division 5 by an order dated January 9, 1948. The examiner said that the record in the proceeding was "replete with examples" of violations of the commission's safety regulations in the present leasing practices. "Violations of the act, aside from violations of commission regulations," he also said, "occur under the guise of leasing," the record having turned up accounts of "frequent instances" where an owner-operator of a leased truck transported a shipment beyond the territory of the lessee carrier under whose authority he has been hauling, and the lessee "attempted to have the unlawful transportation validated by a trip lease.' Trip-leasing is among the practices which would be prohibited by the proposed rules of which there are five.

Five Rules Proposed

The first embodies definitions and the second sets out regulations under which carriers may augment their equipment by acquiring the use of vehicles to which they do not hold title. The regulations stipulate that the contract or lease covering use of the equipment must be in writing; that it shall be for a period of not less than 30 days, unless entered into between certificated or permit-holding carriers, or in cases of emergency; that it shall provide for the "exclusive possession, control and use of the equipment during the full period of the lease," and for the "complete assumption" on the part of the lessee of "full responsibility in respect of said equipment"; and that compensation for the use of the equipment "shall not be computed on the basis of any division or percentage of any applicable rate . . . on any commodity . . . transported . . . during the period of the lease."

Among other provisions of this proposed Rule II are those making it the duty of the lessee carrier to have the leased equipment inspected in order to insure compliance with the commission's safety regulations; those relating to identification and record-keeping with respect to the leased equipment; and those requiring the driver of leased equipment to become an employee of the lessee. The latter provisions, the ones from which railroad and R.E.A. highway operations would be exempt, are embodied in Rule II-g, reading as follows:

"Except where equipment operated under this rule is (1) leased or rented from another authorized carrier and operated between points over the route or routes, or within the territory such other authorized carrier is authorized to serve, or (2) is utilized in the transportation of railway express traffic, or in substituted motor-for-rail transportation of railroad freight moving between railroad stations on railroad billing; the person assigned to drive such equipment shall be an employee of the lessee car-

rier, and his wages shall be kept separate and distinct from any charges made for the use of the equipment and shall not be made part of the terms or conditions of the contract, lease, or other arrangement covering the use of the equipment."

Rule III provides for emergency leasing, and Rule IV covers the interchange equipment among common-carrier truckers. The interchange contract or lease would have to be in writing; the inter-line traffic would have to move on a through bill of lading; certificates held by the participating carriers would have to authorize the through movement and service to and from the interchange point; each carrier would have to assign its own drivers for its respective portion of the movement; and the rental charges for use of the equipment would have to be kept separate from divisions of joint rates or the proportions accruing to the carriers by the application of local or proportional rates.

Rule V relates to the rental of equipment to private carriers and shippers. It would prohibit certificated and permitholding carriers from renting vehicles with drivers to non-carriers unless such renting service is authorized in their operating authorities. Where vehicles are leased without drivers to non-carriers, copies of the leases would have to be sent to the commission's Bureau of Motor Carriers; the lessor carrier's identification marks would have to be removed from the leased vehicles; and the non-carrier lessee would be required to have the vehicles inspected in order to insure compliance with the commission's safety regulations.

Considerations which led Examiner Lawton to include provisions for the exemption of railroad and R.E.A. operations in his proposed Rule II-g were summarized in the proposed report as follows:

Railroad and R. E. A. Exemptions

"The one group of carriers which merit any exemptions from the rules hereinafter prescribed are the Railway Express Agency, Inc., in its motor transportation of railroad express traffic, and railroads which perform substituted motor service in the transportation of railroad freight between railroad stations on railroad billing.

"These operations are essentially those of the railroads or of the Express Agency, in the transportation of railroad freight or express traffic. They are performed under plans which have had the full consideration of the commission and in some instances the courts, and the transportation is under the full responsibility of those respective agencies of transportation. They do not utilize equipment under trip-leases, nor do they utilize the services of owner-operators. Because of the drastic change in their methods of operations that such a requirement would impose upon them, it is the opinion of the examiner that these respondents should be exempted from

the requirement that drivers of leased vehicles must be employees of the lessee carrier. If abuses result from this exemption it could later be removed."

In a notice accompanying the proposed report, I.C.C. Secretary W. P. Bartel advised parties to the proceeding that exceptions might be filed on or before September 26, and replies to exceptions on or before October 11.

Approves Some Routing Restrictions on Grain

While refusing to go as far as interested railroads had proposed, Division 3 of the Interstate Commerce Commission has authorized the establishment of some restrictions on the routing of grain in Central territory. The division's report in I. & S. Docket No. 5092 embraced also I. & S. Docket No. 5358.

The former proceeding goes back to 1941 when the commission suspended tariff schedules proposing specific routing for application in connection with proportional rates on grain from Chicago, St. Louis, Mo., Milwaukee, Wis., and other related gateways to destinations in Indiana, Kentucky, Michigan, New York, Ohio, Pennsylvania and West Virginia. In August, 1944, upon petition of the respondent railroads, the commission vacated the suspension order, thus permitting the tariffs to become effective; but continued its investigation of them. I. & S. No. 5358 involves still-suspended schedules whereby the Baltimore & Ohio, Chesapeake & Ohio, and several of their connections sought to establish on August 1, 1945, specific routing for application in connection with rates on grain from Illinois origins on the B. & O., and from St. Louis, and from origins on the C. & O in Illinois, Indiana, Kentucky, Ohio, and West Virginia, to destinations in Central territory, including border areas.

Established Practice

The tariffs in effect prior to that under investigation in I. & S. No. 5092 were generally unrestricted as to routing, the published rates "for the most part ostensibly applying over all routes formed by carriers parties thereto," as the commission put it. It added that this "so-called open routing was a practice which had prevailed for many years in connection with the transportation of grain in Central territory."

Summarizing its interpretation of the tariffs under consideration, the commission indicated that they comprised an undertaking by the carriers to eliminate routes where the initial carriers would be short-hauled, where multiple-line routes would be created, where an intermediate carrier would be inserted between two segments of another carrier, or where the route would be "unnatural, illogical, or unreasonably circuitous." Also, the railroads objected to routes comprising more than two carriers where the final destination could be reached by a single-line or two-line route.

The commission found that routes

which include not more than three segments of line-haul carriers, and which do not exceed the lengths of the shortest tariff routes from and to the same points by more than 25 per cent, "are desirable in the public interest and are needed in order to provide adequate and more eco-nomical transportation." It stipulated that rates over such routes should not exceed the lowest rates concurrently maintained over the direct routes, "or, in the discretion of respondents, rates not exceeding those concurrently maintained from origins to the intermediate transit points or from the intermediate transit points to final destinations where such rates are higher than from origins to final destinations." A second finding was: "Where a respondent participates in a single-factor rate over a route through a transit point . . . but fails to participate in a like rate from and to the same point over a route of no greater length, comprised of a like or smaller number of segments of line-haul carriers or not more than three such segments, which route is desired for like traffic through another transit point, it is subjecting the latter traffic to undue prejudice."

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The tariffs under consideration were ordered cancelled without prejudice to the filing of new schedules in conformity with the foregoing. The commission added, however, that "all of the many routes within the limitations herein prescribed need not be published in the new schedules if respondents obtain advice from the transit operators that some of the routes through their transit points may be excluded, provided that such exclusion of routes will not constitute discrimination between connecting lines." The report also noted that its findings were "not intended to be a complete determination of lawfulness in every situation" in which the railroads refuse to maintain routes sought; they are "without prejudice to the filing of complaints alleging unlawfulness in special individ-

Money for I.C.C., Highways And Federal Barge Lines

Appropriations of \$11,233,000 for the Interstate Commerce Commission, \$385,-000,000 for federal-aid highways, and \$1,000,000 for purchase by the Department of Commerce of additional stock of the Inland Waterways Corporation, operator of the Federal Barge Lines, are provided in the Independent Offices Appropriation Act for the fiscal year ending June 30, 1950, which was signed by President Truman on August 24. Congressional action on the measure had been completed only two days before, or nearly two months after the beginning of the fiscal year. Since that beginning, on July 1, the agencies involved had been operating under "stop-gap" resolutions providing them with funds on a temporary basis.

The \$11,233,000 provided for the I.C.C.

is \$102,317 less than the \$11,335,317 which it received for the past fiscal year ended last June 30; and it is \$97,100 less than the \$11,330,100 recommended for the commission in President Truman's budget for fiscal 1950. It is, however, \$279,000 more than the amount (\$10,954,000) approved originally by the House. The Senate increased that by \$300,000 to \$11,254,000, and the final compromise figure of \$11,233,000 was embodied in the conference report which reconciled the differing Senate and House versions.

Most of the I.C.C. appropriation covers "general expenses," for which the act carries \$9,600,000. The commission had sought to have this increased to \$9,790,-300, and its failure to accomplish that end is expected to preclude the return to commission payrolls of 30 former service agents of the Bureau of Service who had been paid out of Office of Defense Transportation appropriations and whose services were terminated with the death of that agency on June 30. Although \$100,000 of the \$9,600,000 is earmarked for valuation work on pipe lines, the cut in funds available for other activities of the Bureau of Valuation is expected to result in a substantial reduction in that bureau's staff. The largest item in the "general expense" total is provided for the commission's work in connection with the regulation of motor carriers; and \$3,656,039, is earmarked for that purpose in fiscal 1950.

Appropriations for "railroad safety" and "locomotive inspection" still remain outside the "general expense" grouping. For the former, the commission got a fiscal 1950 appropriation of \$958,500, an

increase of \$16,500 above the fiscal 1949 appropriation and \$7,500 more than the amount recommended in the President's budget. The fiscal 1950 appropriation for locomotive inspection, at \$674,500, is also \$7,500 above the budget estimate, and it is \$26,500 more than the comparable appropriation for fiscal 1949.

The \$385,000,000 provided for federalaid highways is a reduction of \$15,000,-000 below the \$400,000,000 recommended in the President's budget, and it compares with a fiscal 1949 appropriation of \$427,288,854. There is no separate appropriation for grade-crossing elimination and protection work, since the legislation applicable to the postwar highway program permits the use for such work of up to 10 per cent of the funds made available for highways.

The \$1,000,000 appropriated for purchase by the Department of Commerce of additional stock of the Inland Waterways Corporation will raise the total of such purchases to \$15,000,000, thus taking up all stock which I.W.C. is authorized to issue. Meanwhile, there is pending in Congress legislation to increase the corporation's authorized capital stock by \$18,000,000, i.e., to \$33,000,000.

Railroad Hour Will Move To N.B.C. on October 3

Beginning Monday, October 3, the operettas and musical comedies presented on "the Railroad Hour," starring Gordon MacRae and guests of the films, stage and opera, will be heard each Monday evening on the National Broadcasting Company network, the Associa-



The Canadian Pacific's new hump retarder yard at Montreal, Que., scheduled for completion in 1950, will be a new departure in yard design in Canada. To be completely new in every respect, the terminal will have approximately 80 mi. of tracks, including a 1,151-car receiving yard, a 1,550-car classification yard (shown above), a 220-car departure yard, and a car-repair yard of 300-car capacity. A new 37-stall enginehouse with supporting facilities, dormitory buildings for train and engine crews, and a new icing station are included in the project. When in service, the yard will handle work now being done in three small yards and will eliminate costly transfer operations. Eventually, the three yards will be abandoned, and the land they occupy will be converted to industrial sites

tion of American Railroads has announced. During the past year, its first on the air, the program has been heard over the American Broadcasting Com-

pany network.

The N.B.C. schedule for the broadcast will be 8:00 to 8:30 p.m., eastern standard time; 7:00 to 7:30 p.m., central standard time; 9:30 to 10:00 p.m., mountain standard time; and 8:30 to 9:00 p.m., Pacific standard time. "In its first year on the air," the A.A.R. announcement said, "the program quickly established itself as one of the top-rated of its kind, winning the acclaim of listeners and critics alike. At times, 'the Railroad Hour' attained a higher audience measurement than other comparable shows that have been broadcast from 10 to 15 years."

Hearing in Eastern L.C.L. Case Postponed to Oct. 25

The Interstate Commerce Commission has postponed from September 21 until October 25 the further hearing in the reopened proceeding wherein Eastern railroads are proposing increases in their rates on l.c.l and any-quantity traffic. The hearing will be held at Washington, D. C., before Examiner M. J. Walsh (see Railway Age of July 23, page 49).

Retirement Board Vacancy

The term of Julius G. Luhrsen, labor member of the Railroad Retirement Board, expired on August 29 and up to the time this issue went to press no nomination had been sent to the Senate by President Truman. There is no provision in the Railroad Retirement Act whereby a member may continue in office after his term has expired to await the appointment and qualification of a successor.

Mr. Luhrsen has been a member of the board since March, 1945, when he was appointed by the late President Roosevelt to succeed Lee M. Eddy, whose term had expired on August 29, 1944. At that time he was executive secretary of the Railway Labor Executives' Association and president (on leave) of the American Train Dispatchers Association, which he founded. "Labor" announced in its July 16 issue that the R.I.E.A. had endorsed Mr. Luhrsen for reappointment to the board for a new 5-year term.

Murrow Named A.A.R. Director Of Competitive Research

Brigadier General Lacey V. Murrow, assistant to the vice-president in charge of the Operations and Maintenance Department of the Association of American Railroads, has been appointed to the newly created position of executive director of competitive transportation research of the association. He took over his new duties on September 1, and thus assumed charge of all A.A.R. activities relating to highway, water and air transportation.

Born in Greensboro, N. C., in 1904, General Murrow received degrees of bachelor of science and master of science from Washington State College. In 1919, he entered the service of the Highway Department of the state of Washington, becoming construction engineer in 1928 and director of highways in 1931.

General Murrow resigned from his state government post in 1940 to enter the United States Air Corps as a pilot with the rank of captain. In 1942, he



Brig. Gen. Lacey V. Murrow

was promoted to colonel, and he was advanced to the rank of brigadier general in 1946. During the war, he saw active service in the South Pacific, Europe, Africa, China, Burma and India, and during the latter part of the war was chief of transportation in the China theater.

General Murrow holds several service decorations and citations from the United States and other governments, and at the present time commands the Reserve 323rd Air Division. Upon his separation from the Air Force in 1946, he joined the staff of the A.A.R.

Another Tennessee County Put in Eastern Time Zone

The Interstate Commerce Commission has modified its definition of the Eastern Standard Time Zone so as to embrace Rhea County, Tenn., which has been in the Central Standard Time Zone. The change, effective August 28, was made by the commission's thirty-first supplemental report in No. 10122. The thirtieth supplemental report made a like change, effective August 14, with respect to Hamilton County, Tenn. (see Railway Age of August 13, page 77).

Tariffs Suspended

The Interstate Commerce Commission has suspended, from August 20 until March 19, 1950, the operation of a proposed supplement to the Consolidated Freight Classification, which would restrict Rule 34 so that when a shipper orders a closed car less than 40 ft. 6 in. in length, and the carrier furnishes a

longer car, the minimum weight would be that fixed for the car furnished. The suspension order instituted an investigation of the tariffs involved, docketing the proceedings as I. & S. No. 5690.

The commission has also suspended, from September 1 until March 31, 1950, the operation of tariff schedules whereby New England roads would discontinue free pick-up and delivery service on l.c.l. and establish for such service charges ranging from 25 cents to \$1 per shipment. This proceeding is docketed as I. & S. No. 5696. Meanwhile, the commission permitted schedules to become effective which published pick-up and delivery charges on a cents-per-100 lb. basis (ranging from 10 to 26 cents) for application on the Reading, Central of New Jersey, Central of Pennsylvania and Pennsylvania-Reading Seashore Lines.

Air Parcel Post a Year Old; 7 Million Packages Handled

Air parcel post service was one year old on September 1, and the Air Transport Association took occasion to issue a statement saying that the service had attracted a volume of traffic "almost double" the estimates made a year ago. It quoted "Post Office officials" as having reported that 7 million parcels, weighing a total of 14 million lb., were handled by the air lines during the year.

The postage collected on this business was put at about \$9 million. "Previous estimates had placed the probable volume at 4,700,000 parcels," A.T.A. also said.

N.Y.C. Issues New "Fast Freight Train Schedules"

The New York Central System has published a new issue of "Fast Freight Train Schedules," designed as a guide to shippers, traffic managers and representatives of transportation companies which forward or receive carload or l.c.l. freight via that road. The timetable, which resembles a passenger train timetable, gives the schedules of 112 regularly operated symbol—or express—freight trains. The pamphlet contains such information as the arrival and departure times at terminal and intermedi-

The railroads could release billions of dollars tomorrow in newly created employment to straighten curves, reduce grades, and to modernize and relocate terminals—improvements that could not only give a worthwhile return on the expenditures but put the railroads in shape to render better and cheaper service for the future—if our government would only lift its destructive and oppressive hand from the rate structure.

-Robert R. Young, chairman of the board of the Chesapeake & Ohio and chairman of the executive committee of the Federation for Railway Progress.



The Railroad Fair's "Gold Gulch," where the 19th century is reborn

ate points, the make-up and connections for the symbol trains, a map of the Central system, a list of freight traffic representatives and special service announcements.

Freight Car Loadings

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Loadings of revenue freight in the week ended August 27 totaled 746,912 cars, the Association of American Railroads announced on September 1. This was an increase of 15,697 cars, or 2.1 per cent, over the previous week, a decrease of 144,754 cars, or 16.2 per cent, under the corresponding week last year, and a drop of 178,800 cars, or 19.3 percent, under the equivalent 1947 week.

Loadings of revenue freight for the week ended August 20 totaled 731,215 cars, and the summary for that week as compiled by the Car Service Division A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, August 20
rict 1949 1948 15 1949 127,570 140,586 District 156,105 157,811 187,115 Eastern ... Allegheny 186,798 74,576 131,851 Pocahontas

Southern

45,925 108,565 132,960 72,128 129,801 143,217 Northwestern Central Western 146,765 135,290 117,735 141,703 57.874 Southwestern 69,278 69,120 Total Western 308.569 351.333 354,040 Total All Roads 731,215 900,663 900,895 Commodities:
Grain and grain
products
Livestock 50,680 10,663 113,434 9,560 40,498 69,241 10,931 187,241 14,782 53,376 77,162 12,135 177,377 Coke 14,039 49,276 Forest products 78,127 Merchandise l.c.l. 115,514 Miscellaneous 345,476 394,712 396,411 731,215 728,029 716,824 723,810 718,516 900,663 891,276 878,647 894,375 882,129 900,895 906,305 905,244 921,591 919,928

Cumulative total 33 weeks 23,673,795 26,921,780 27,892,188

In Canada.—Carloadings for the week ended August 20 totaled 79,171 cars, compared with 74,207 cars for the previous week, and 80,250 cars for the corresponding week last year, according to the compilation of the Dominion Bureau of Statistics.

				Cars Loaded	Rec'd from Connection
Totals fo	r Ca	nada:			
August	20,	1949	**********	79,171	29,341
August	21,	1948	***********	80,250	33,986
Cumulati	ve to	tals f	or Cana	da:	
August	20,	1949	**********	2,392,338	1,018,869
August	21,	1948	***********	2,472,555	1,139,103

Hamley Resigns as Solicitor Of Commissioners' Association

Frederick G. Hamley, general solicitor of the National Association of Railroad and Utilities Commissioners with headquarters at Washington, D. C., has resigned from that position to accept appointment as a justice of the Supreme Court of the state of Washington. The appointment was made last week by

Governor A. B. Langlie of Washington, and Mr. Hamley is scheduled to assume his new duties when the court convenes for its fall term on September 12.

Before joining the legal staff of the commissioners' association, Mr. Hamley had served as director of the Washington Department of Public Service, predecessor to that state's present regulatory body, the Washington Public Service Commission. He has been with the association since 1943, serving first as assistant general solicitor; and since January 1, 1945, as general solicitor. His work has included making the association's presentations in the general railroad freight-rate cases of the postwar period.

R. E. Boyle, Jr., Elected by Southern Freight Association

Robert E. Boyle, Jr., chairman of the Southern Classification Committee at Atlanta, Ga., has been elected vice-chairman of the Southern Freight Association, with headquarters at Atlanta. William L. Taylor, assistant to vice-president of the Southern at Washington, D. C., succeeds to Mr. Boyle's former position.

C. & E. I. Offers Broad **Excursion Privileges**

The one-way fare plus 25 cents will bring passengers from communities along the Chicago & Eastern Illinois to Chicago on regular scheduled trains, and permit them a stay of as long as five days before their return, effective September 6 through September 30. Children between 5 and 12 years of age may make the round trip for 50 cents. The new incentive fares are based on the success of a series of excursions started on June 27 from individual stations to Chicago, in connection with the Railroad Fair



DIESEL ON PIKE'S PEAK—A General Electric locomotive precedes a passenger car down from the top of Pike's Peak. One of two G. E. locomotives now in service on the Manitou & Pike's Peak, it will soon be joined by two more G. E. units of similar design. The double rack-rail which gives traction is visible in front of the locomotive

"RALPH BUDD DAY" AT THE CHICAGO RAILROAD FAIR

August 31 was designated "Ralph Budd Day" at the Railroad Fair in Chicago, in honor of the "Dean of Railroad Presidents," whose retirement from the presidency of the Chicago, Burlington & Quincy became effective on that day.

The Harbor View restaurant on the lakefront at the fairgrounds was the scene of a testimonial dinner in tribute to Mr. Budd, sponsored by a committee of railroad men headed by Carroll R. Harding, president of the Pullman Com-pany. William T. Faricy, president of the Association of American Railroads, presided at the dinner, which was attended by 500 railway and railroad supply company executives, including 39 railroad presidents from all parts of the country. Fred G. Gurley, president of the Atchison, Topeka & Santa Fe, extended felicitations to Mr. Budd, and J. D. Farrington, president of the Chicago, Rock Island & Pacific, presented to the guest of honor an oil portrait of himself in behalf of those present. John M. Budd, vice-president of

the Great Northern, and son of the retiring Burlington head, made the formal acceptance of the portrait.

At the 9 o'clock performance of the pageant, "Wheels A-Rolling," Ralph Budd arrived aboard the streamlined "Pioneer Zephyr" in re-enactment of his arrival aboard that same train (on its initial run from Denver, Colo.), at the "Century of Progress" in Chicago 15 years before. Here he was greeted by Charles G. Dawes, former vice-president of the United States, and Major Lenox R. Lohr, president of the fair, who as a director and general manager, respectively, of the "Century of Progress" had greeted him on the earlier occasion. Then, before an audience of approximately 5,000, including the 500 special "Ralph Budd Day" guests and against a backlog of about 40 of those who had made the maiden run of the "Pioneer Zephyr" 15 years earlier, Mr. Faricy presented to Mr. Budd an A.A.R. citation in tribute to his outstanding contribution to the railroad industry.

(see Railway Age of July 9, page 138).

The first excursions, operated on separate days from 14 communities in Indiana and Illinois with an average population of 18,800, and an average distance of 178 mi. from Chicago, attracted a total of 1,283 adult passengers and 397 children.

Suspends 25-Cent Charge For "Red Cap" Service

The Interstate Commerce Commission has suspended, from September 1 until March 31, 1950, the operation of tariff schedules proposing to increase charges for "red cap" service at Cincinnati, Ohio, Columbus, and Indianapolis, Ind. The schedules, embodied in an agency tariff filed on behalf of the Cincinnati Union Terminal Company, Indianapolis Union Railway Company, and Union Depot Company of Columbus, propose to raise the charge for handling passengers' hand baggage from 15 cents to 25 cents per piece. A complaint against the proposal was filed with the commission by the United Transport Service Employees, a "red cap" union.

I.C.C. Puts Freight-Bill Credit on Five-Day Week

The Interstate Commerce Commission has modified its outstanding Ex Parte 73 orders to exclude Saturdays as well as Sundays and legal holidays from the calculation of the prescribed periods of credit allowed on and time allowable for presentation of freight bills. The modification, embodied in an August 25 order by the commission's Division 2, was sought in a petition filed by E. H. Bunnell, vice-president of the Association of

American Railroads, as a result of the 40-hour week for non-operating employees which became effective September 1.

Approved Packaging-**A Correction**

In the article on page 43 of Railway Age of August 6 it was erroneously stated that certain packages used by the Electro-Motive Division of General Motors Corporation were approved by the Freight Loading and Container Section of the Association of American Railroads. Actually, all such packages are approved by the Consolidated Classification Committee.

Additional General News appears on pages 88, 90 and 92.

OVERSEAS

Iran.—The Iranian State Railway, according to a recent issue of Foreign Commerce Weekly, wants to purchase the following equipment: 40 Santa Fe type locomotives, 80 coaches (10 first class, 23 second class, 37 third class and 10 mail and baggage coaches), 190,000 meters of rail, 220,000 metallic ties, 18 small generators and various spare parts for Diesel engines and electric pumps. Bids, in French, should be addressed to the railroad at Tehran. Iran.

SUPPLY TRADE

C. W. Floyd Coffin, formerly vice-chairman of the board of the American Arch Company, New York, has been elected chairman of the board of directors, succeeding S. G. Allen.

Phillips B. Hoyt has been appointed director of purchases of the American Car & Foundry Co. to succeed A. A. Borgading who has retired after 42 years of service. In his new capacity, Mr. Hoyt will have executive and administrative



Phillips B. Hoyt

control of the company's procurement of carbuilding and other materials. He was graduated from Cornell University's engineering school and, before he joined American Car & Foundry, was associated with the Ingersoll Rand Company, Phillipsburg, N. J., for 22 years.

The Union Steel Products Company, Albion, Mich., has announced the appointment of Rumsey-Perkins Inc., Chicago, to direct the combined advertising programs of the wire products and bakery divi-

W. L. Corbett, has been appointed to a newly created post of assistant to the district manager of the American Steel & Wire Co., Pittsburgh, Pa., a subsidiary of the United States Steel Corporation. Mr. Corbett will serve on special assignment in his new post. Associated with the company since 1915, he formerly was superintendent of industrial relations at the Waukegan, Ill., plant.

John A. Robinson has been appointed regional sales manager for the midwest, northwest, Rocky mountain and Pacific coast areas for the Brown instruments division of the Minneapolis-Honeywell Regulator Company, with headquarters at Chicago, where he has been branch industrial manager. Charles E. Sharp, located at the Chicago office for the past five years, has been appointed Chicago branch industrial manager, to succeed

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Mr. Robinson. Both Mr. Robinson and Mr. Sharp have been associated with the Brown company for 20 years.

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The Baker industrial truck division of the Baker-Raulang Company, Cleveland. Ohio, has announced the appointment of Edgar E. George as district sales representative, with headquarters at High Point, N. C. Mr. George will serve as material handling engineer for Baker truck applications and will handle the sale of the equipment. He formerly was associated with the Dura-Products Manufacturing Company, Canton, Ohio, as secretary, treasurer and sales manager, and with the Mirro-Products Company, High Point, as president.

Robert S. Ogg has been appointed educational director of the Diesel Engine Manufacturers Association, succeeding Ervin L. Dahlund, who resigned from this position on June 1 to become the chief engineer of the Diesel engine division of Fairbanks, Morse & Co., at Beloit, Wis. Mr. Ogg comes to the D.E.M.A. staff from the Lima-Hamilton Corporation,



Robert S. Ogg

Hamilton, Ohio, where he has been for a number of years in the engineering department. A large part of Mr. Ogg's time will be spent with the accredited mechanical engineering schools of the country. The remainder will be with the engineering departments of the Diesel engine builders and the 41 manufacturers of parts, accessories and oils for Diesel engines that are assisting with this educational program.

Azed, Inc., 80 E. Jackson boulevard, Chicago 4, a new corporation jointly owned by Poor & Co., Chicago, and the Acme Steel Company, Riverdale, Ill., has been formed to engage in the research, manufacture and sale of products and processes for all phases of the application and secondary treatment of zinc surfaces. F. A. Poor, chairman of the board of Poor & Co., is president of the new corporation; C. S. Traer, chairman of the board of Acme Steel, C. J. Sharp, president of Acme Steel, and A. E. Ches-

ter, research director of Poor & Co., are vice-presidents of Azed; P. W. Moore, president of Poor & Co., is vice-president, secretary and treasurer; and R. R. Jenkins, general manager.

H. E. Chilcoat has been appointed manager of the newly created railroad sales department of the Townsend Company, with headquarters at the main office in New Brighton, Pa. Mr. Chilcoat formerly was vice-president in charge of sales for the Pressed Steel Car Company, Pittsburgh, Pa.

The Ajax-Consolidated Company has announced the appointment of Mount Royal Specialties Company, Sun Life Building, Montreal, as its exclusive distributor in Canada for Ajax-Consolidated Da-Lite control blinds, automatic slack adjusters and Sure-Flo sanders; Coach & Car Equipment Co. seats; and Jenkins leather fiber dust guards.

John A. Robinson has been appointed regional sales manager for the Midwest, Northwest, Rocky Mountain and Pacific Coast areas for Brown Instruments Division of Minneapolis-Honeywell Regulator Company, with headquarters at Chicago. Mr. Robinson has been connected with that division for 20 years. He was formerly branch industrial manager at Chicago.

The American Lumber & Treating Co. has realigned sales responsibilities in two of its district offices. C. D. Bird, formerly middle Atlantic district manager at Washington, D. C., has been appointed district sales manager of the company's newly-organized south central sales region, with headquarters at the Exchange building, Little Rock, Ark. The Washington office has been closed.

J. P. Johnson, Jr., formerly sales representative at Philadelphia, Pa., has been appointed to succeed Mr. Bird as district sales manager of the middle Atlantic region, with offices to be located at the company's plant in the Fairfield district of Baltimore, Md.

Maurice G. Staton has been appointed sales manager of microwave relay and channeling equipment in the engineering products department, Radio Corporation of America, Camden, N. J. Mr. Staton has been with R.C.A. since January, 1946, when he was assigned to field installation work on the New York-Philadelphia radio relay circuit for Western Union Telegraph Company.

OBITUARY

Dr. Arthur L. Jacoby, associate director of research for the National Aluminate Corporation, died of a heart attack on August 13, at the age of 39. Dr. Jacoby attended the Chicago public schools and received his B.S. degree in chemical engineering from the University of Illinois in 1934. He subsequently studied at Iowa

State College, Ames, Iowa, where he obtained his Ph. D. degree in 1939. Dr. Jacoby entered the industrial research field in 1938, at which time he joined the National Aluminate Corporation as an organic chemist. He was assistant director of research before his promotion to associate director of research.

William Elliston Farrell, founder and chairman of the Easton Car & Construction Co. of Easton, Pa., died at St. Luke's hospital, Bethlehem, Pa., on August 22. He was 79 years old.

CAR SERVICE

I.C.C. Service Order No. 840, effective from August 26 until October 31 unless otherwise modified, authorizes railroads serving California and Arizona to furnish from two to four S.F.R.D. or P.F.E. refrigerator cars. "not suitable for transporting commodities requiring protective service," in lieu of one box car ordered for the transportation of cotton between points of origin and compress points of origin and compress points to points on the Southern Pacific, Texas & New Orleans, Union Pacific, and Atchison, Topeka & Santa Fe.

I.C.C. Service Order No. 841, effective from August 26 until October 31, authorizes the substitution of two or three refrigerator cars for one box car ordered for the transportation of fruit and vegetable containers, box shooks or other packaging or packing materials from points of origin in California and southern Oregon to destinations in California.

Chairman Arthur H. Gass of the Car Service Division, Association of American Railroads, cancelled, as of September 1, Special Car Order No. 51 which had been in effect since July 15. The order was designed to expedite the return home of box cars owned by seven northwestern roads then preparing to handle the spring wheat movement.

EQUIPMENT AND SUPPLIES

Domestic Equipment Orders Reported in August

Domestic orders for 10 Diesel-electric locomotive units, 1 steam-turbine, electric drive locomotive, and 157 freight cars were reported in Railway Age in August. No orders for passenger cars were reported. The estimated cost of the Diesel-electric units is \$1,203,532 and of the freight cars \$846,722. Because the steam-turbine locomotive is a new experimental

L & N. N.J.I. & I.

N.O. Public Belt

Aug. 20 Aug. 20

Locomotives

Type	Builder
600-hp. DE. rdsw. units	Electro-Motive
000-h.p. DE. sw. units	Electro-Motive
600-hp, steam-turbine, electric	Baldwin-West.
drive frt. loco.	Babcock & W

Freight Cars

70-ton	cov.	hopper	Pullman-Standard
50 ton	box	**	Amer. Car & Fdy.
70-ton	cov.	hopper	Thrall

type, no estimate has been made of its cost. The accompanying table lists the orders in detail.

During the first eight months of 1949, Railway Age has reported domestic orders for 3,867 freight cars and 30 passenger cars costing an estimated \$19,576,722; and 505 Diesel-electric locomotive units, 13 steam and 7 electric locomotives, the estimated cost of which is \$76,663,332. Also reported was the order for the steam-turbine, electric drive locomotive mentioned in the preceding paragraph.

SIGNALING

The Chicago, Burlington & Quincy has placed an order with the General Railway Signal Company for equipment to install Type K, two-wire centralized traffic control on 12.2 mi. of single track between Oxford Junction, Neb., and Flynn. The control machine, to be located at McCook, Neb., will have a 22-in. panel equipped with 8 track lights and 6 levers for the control of 2 switch machines, 3 switch locks and 10 signals. This installation will be an extension of the previously installed C.T.C. system between Hastings, Neb., and McCook.

ORGANIZATIONS

French and American Military Railroaders Form Association

The Franco-American Railwaymen's Friendship Association has been formed for the purpose of preserving the bonds of friendship created during the Second World War between American and French military railroaders. General Carl R. Gray Jr., Veterans Administrator, Washington, D. C., is honorary president of the newly formed organization, and Ralph O. Jensen, terminal superintendent of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Schiller Park, Ill., is president.

M. F. Weber, traffic manager of American Stove Company, has been appointed chairman of the loading research division of the National Safe Transit Committee, which has been engaged in a campaign to educate manufacturers in better ways of loading and bracing their packaged finished metal products in railroad cars, trucks, and airplanes.

The 14th annual dahlia and autumn flower show of the Pennsylvania Railroad Garden Club will be held September 9-10 at Pennsylvania Station, Philadelphia, Pa. It is expected the club's 1,800 members will exhibit more than 750 entries in the show's 251 classes. There will be 13 silver sweepstakes trophies, 2 grand champion awards, 1 beautification award and 355 class prizes. After the exhibition, the flowers will be distributed to various hospitals.

The 73rd quarterly meeting of the Great Lakes Regional Advisory Board, will be held in the Hotel Statler, Buffalo, N. Y., September 27 and 28. This important session, devoted exclusively to the discussion of freight loss and damage, will commence with a buffet dinner on the 27th followed by addresses by H. E. Chapman of S. S. Kresge Company, Detroit, Mich., and other industrial and railroad claim specialists. C. R. Megee, vice-chairman of the Car Service Division of the Association of American Railroads, will outline the national transportation situation. R. R. Macleod, vice-president of Buffalo Niagara Electric Corporation, will be the speaker at the luncheon on September 28, cosponsored by the Buffalo Chamber of Commerce and the several transportation clubs of Buffalo.

The Trans-Missouri-Kansas Shippers Board will hold its 84th regular meeting at the Mayo hotel, Tulsa, Okla., on September 15, at which time the program will include, among other reports one on the national transportation situation by R. E. Clark, manager of the closed car section, Car Service Division, Association of American Railroads, Washington, D. C. Members and guests will join the Tulsa Chamber of Commerce and Traffic Club of Tulsa in a joint luncheon at the Chamber of Commerce Banquet Hall to hear J. L. Burke, president of the Stanolind Pipe Line Company of Tulsa, speak on: "The Pipe Line's place in Transportation."

The Canadian Railway Club will open the fall season with a meeting on September 12 at 8 p.m. at the Mount Royal Hotel, Montreal, Que. The next meeting of the Southern & Southwestern Railway Club will be held September 8 at 10 a.m. at the Ansley Hotel Rainbow Roof, Atlanta, Ga. "Modern Railroad Equipment" will be the subject of an address by J. D. Loftis, chief of motive power and car equipment of the Atlantic Coast Line.

The Northwest Car Men's Association will hold its first meeting of the season September 12 at 8 p.m., at the Midway Club, 1931 University avenue, St. Paul, Minn. H. S. Mitchell of the Broderick & Bascom Rope Co. will present a paper entitled "Manufacture, Maintenance & Proper Use of Wire Rope."

The next meeting of the Northwest Locomotive Association will be held at the Midway Club, 1931 University avenue, St. Paul, Minn., on September 19, 8 p.m. A paper on "Woodward Governors" will be presented by the Woodward Governor Company, Rockford, Ill.

The Pacific Railway Club will hold a joint meeting with the American Society of Mechanical Engineers on September 22, 6 p.m., at the Engineer's Club, 206 Sansome street, San Francisco, Cal. C. D. Allen, president of Allen-O'Neill Associates, Inc., San Francisco, will speak on "The Coming Gas Turbine" and a movie entitled "The Cornish Steam Engines" also will be shown.

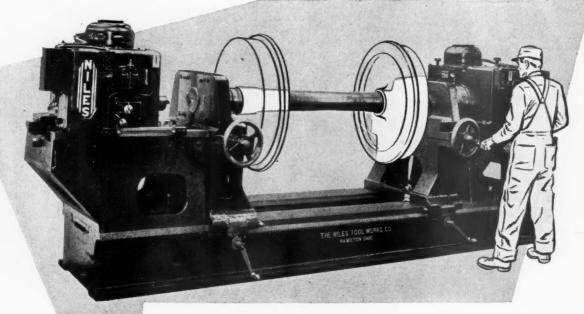
The 80th regular meeting of the Pacific Coast Transportation Advisory Board will be held on September 14-15, at the Palace hotel, San Francisco, Cal. A silver anniversary luncheon, sponsored by the Pacific Traffic Association, will be held on the 15th, with A. E. Stoddard, president, Union Pacific, Omaha, Neb., as guest speaker. Mr. Stoddard's address will be entitled "My World War II Experiences on Foreign and Domestic Rail-roads".

CONSTRUCTION

Nashville, Chattanooga & St. Louis.—Company forces of this road will erect a new fireproof tower building and install an NX interlocking plant at Howells (Atlanta), Ga., at a total estimated cost of \$312,960, to be borne jointly by the N. C. & St. L. and the Southern. Also authorized is the reconstruction of Bridge 19.8, Chattanooga division, involving the raising of two center spans and the installation of a deck plate girder span at each end, to cost \$33,800.

Pacific Electric.—This road has applied to the Interstate Commerce Commission for authority to construct a 2.8-mi. connecting track near Azusa, Cal.

Axles centered in 3 minutes



with ± .005" concentricity

This is the new Niles Hydraulic Centering Machine installed at the Glenwood wheel shops of the B&O.

The Baltimore & Ohio reports that an axle alone, or an axle with wheels mounted on it, can be centered on both ends in three minutes. At this rate, direct savings in labor amount to about 10% per year on the investment.

However, the really big saving results from the accuracy, both in alignment and in concentricity, of the centers. Centers are held to within \pm .005 inches of concentricity with collars, journals or wheel seats. With such near-perfect centers, both an axle and the wheels mounted on it can be turned faster, with less material removed—with longer life and with far better balance of the mounted wheel set. Further, these savings in turning will be realized again and again as axles now going through the shop return for wheel attention later.

This Niles Hydraulic Centering Machine is designed to cut costs and improve quality of output of major wheel shops. It is a fitting companion to the Niles profiling attachment for car-wheel lathes, since, without accurate centers in axles, highly accurate concentricities in wheel treads are impossible.

With this machine, axles are chucked on collars, journals or, if unmounted, on wheel seats. Operation from that point on is fully automatic—traverse of both heads, boring to uniform depth, and return traverse.

Machine can also be used to check concentricity of journals and wheel treads. It will accommodate axles with inside or outside journals up to 6½" dia. (up to 12" if special chucking jaws are ordered), and mounted wheel sets up to 57" dia. It is powered by two 3-hp motors, utilizes hydraulic feed, and is completely self-lubricated.

For further information, call the Lima-Hamilton sales offices in New York or Chicago, representatives in other cities, or write directly to Lima-Hamilton Corporation, Hamilton, Ohio.



DIVISIONS: Hamilton, Ohio—Niles Tool Works Co.; Hooven Owens, Rentschler Co. Lima, Ohio —Lima Locomotive Works Division; Lima Shovel and Crane Division.

PRINCIPAL PRODUCTS: Niles heavy machine tools; Hamilton diesel and steam engines; Hamilton heavy metal stamping presses; Hamilton-Kruse automatic can-making machinery; Locomotives; Cranes and shovels; Special heavy machinery; Heavy iron castings; Weldments.

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ABANDONMENTS

San Luis Valley Southern.—The Interstate Commerce Commission has dismissed this road's application for authority to abandon its 31.5-mi. line from Blanca, Colo., to Jaroso. The dismissal was requested in a petition filed by the road.

Application has been filed with the In-

terstate Commerce Commission by:
Denver & Rio Grande Western.—To
abandon its narrow-gage line between Mears Junction, Colo., and Hooper, 60 miles.

FINANCIAL

Central of New Jersey.—Reorganization Proceedings Ended .- United States District Court Judge Guy L. Fake on August 30 signed a formal order in Newark. N. J., returning this road to its owners. The order will become effective at 12:01 a.m., October 1. The C. of N. J., which went into reorganization under the national bankruptcy act on October 30, 1939, recently was authorized by the Interstate Commerce Commission to carry out its plan for adjusting its capital structure under provisions of the socalled Mahaffie Act (see Railway Age of July 30, page 65), as a result of which reorganization was avoided.

New York Central.—Trackage Rights. -This road has applied to the Interstate Commerce Commission for approval of a new agreement under which it would continue to operate under trackage rights over the line of the New York, Ontario & Western between Fulton, N. Y., and Oswego, 13 mi. The new agreement supplants an 1886 contract.

Reading.-Merger of Leased Line .-This road and its lessor, the Schuylkill Valley Navigation & Railroad Co., have applied to the Interstate Commerce Commission for authority to merge the latter into the Reading. The Schuylkill extends from a connection with the Reading 21/4 mi. southwest of Tamaqua, Pa., to Palo Alto, 15.9 mi. The Reading has operated the road under lease since 1861, and now owns two-thirds of its stock. The merger plan provides that the Schuylkill stock shall be cancelled and, except for shares held by itself, Reading shall deliver in exchange therefor its own first preferred stock on the basis of 11/4 shares for each share of Schuylkill stock. The application said the proposed merger would simplify the corporate structure of the Reading.

Tennessee Central.—R.F.C. Loan.-This road has applied to the Interstate

Commerce Commision for approval of a plan to extend the maturity date of indebtedness due to the Reconstruction Finance Corporation. The indebtedness, totaling \$5,232,300, represents three loans due April 1, 1950. The extension plan contemplates that the maturity date be set back ten years and that a renewal note be increased by \$375,000 to cover deferred interest through September 20, 1949, and semi-annual interest due on April 1, 1950.

Wheeling & Lake Erie.—Stock Purchased.-Alleghany Corporation, together with affiliated companies, has purchased the entire block of Wheeling & Lake Erie common stock owned by the Pennroad Corporation. The number of shares bought by each purchaser was not disclosed. On June 30 Pennroad held 59,-500 W. & L. E. common shares.

Dividends Declared

Boston & Albany.—\$2.00, payable September 30 to holders of record August 31.

Dayton & Michigan. — common, 87½¢, semi-annual; 8% preferred, \$1.00, quarterly, both payable October 5 to holders of record September 15.

Denver & Rio Grande Western.—\$1.00, payable September 15 to holders of record September 2.

Eastern Massachusetts. — 6% preferred B, \$1.50 (accum.), payable October 1 to holders of record September 2.

Kansas City Southern.—common, \$1.00, payable September 15 to holders of record August 31; 4% preferred, \$1.00, quarterly, payable October 15 to holders of record September 30.

Pittsburgh, Ft. Wayne & Chicago. — common, \$1.75, quarterly, payable October 1 to holders of record September 10; 7% preferred, \$1.75, quarterly, payable October 4 to holders of record September 10.

Reading.—4% 2nd preferred, 50¢, quarterly, payable October 4 payable New York Payable New York

tember 10.

Reading.—4% 2nd preferred, 50¢, quarterly, payable October 13 to holders of record September 22.

Union Pacific.—common, \$1.25, quarterly; 4% preferred, \$1.00, semiannual, both payable October 1 to holders of record September 6.

Average Prices Stocks & Bonds

	Aug.	Last	
Average price of 20 repre			
sentative railway stocks Average price of 20 repre		37.59	50.11
sentative railway bonds		86.10	89.31

RAILWAY OFFICERS

FINANCIAL, LEGAL & ACCOUNTING

James J. Donohue, general attorney of the Louisville & Nashville, with headquarters at Louisville, Ky., retired on August 31 at his own request after more than 62 years of continuous service with that road. He has been succeeded by James P. Hamilton, assistant general attorney at Louisville. Mr. Hamilton has system-wide jurisdiction over litigation involving personal injuries and properdamage (not including freight claims), and continues as district attorney for western Kentucky and personnel department counsel. Henry W. Willen, general claims attorney at Louisville, has been placed in charge of the general

claims division and the surgical department and William J. Crecelius, general claims agent at that point, has been given increased responsibilities in the general claims division. Joseph L. Lenion has been appointed attorney at Louisville.

Thomas E. Adamson, freight claim agent of the Chicago & North Western at Chicago, retired on August 31 after nearly 44 years of service. He has been succeeded by A. C. Mundy, assistant freight claim agent at that point.

EXECUTIVE

Glenn Hinton Caley, whose retirement because of ill health as vice-president, general manager and director of the Delaware & Hudson at Albany, N. Y., was announced in Railway Age of August 6, was born at Middletown, N. Y., on October 25, 1888. Mr. Caley entered railroad service on January 9, 1905, with

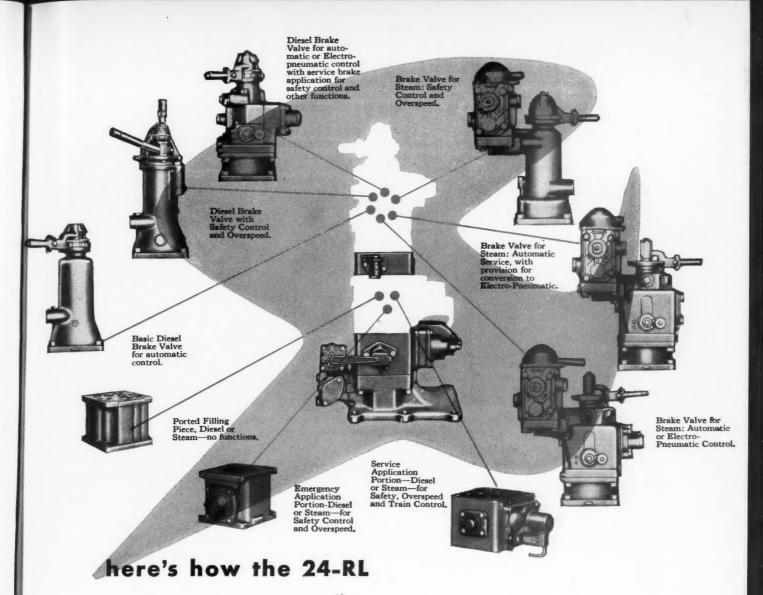


Glenn Hinton Caley

the New York, Ontario & Western and served in various positions including electrical and signal engineer. He became general manager of that road on April 1, 1937, and in June, 1938, he went with the Delaware & Hudson as vicepresident and general manager at Albany, the post from which he recently retired.

OPERATING

Percy O. Ferris, whose appointment as assistant general manager and chief engineer of the Delaware & Hudson at Albany, N. Y., was announced in Railway Age of August 6, was born at Peekskill, N. Y., on May 29, 1892. A graduate of Rensselaer Polytechnic Institute (C.E., 1916), he was an instructor in mathematics and surveying there from June, 1916, to July, 1917, when he entered railroad service as rodman in the office of the chief engineer of the D. & H. at Albany. One month later Mr. Ferris became senior transitman at Plattsburg,



"Stacks Up"

against braking needs

Based on the modern principle of combining interchangeable parts with various functions, the Westinghouse 24-RL brake equipment is readily adapted to meet the operating requirements of any service. It is particularly suited to modern "assembly line" production of road locomotives, whose assignments may be undetermined when construction starts; functional sections with the desired function may be inserted as requirements are established.

A further advantage comes when locomotives enter service, as substitutions of parts to provide added functions can be readily made, with no change in basic piping.

For more information, ask for Catalog No. 2058.





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Westinghouse Air Brake Co.



N. Y., and in November, 1920, he was appointed assistant roadmaster at Port Henry, N. Y. He became track supervisor at Carbondale, Pa., in November, 1921; roadmaster there in September, 1924; assistant engineer maintenance of way at Albany in May, 1925; division engineer at Oneonta, N. Y., in April, 1938; and acting engineer maintenance of way at Albany in July, 1938. Mr. Ferris was appointed engineer maintenance of way at Albany in February, 1939, and five months later he was promoted to chief engineer at Albany, which position he will continue to hold in addition to the duties of assistant general manager.

W. F. Trimble, supervisor of transportation of the Manitoba district of the Canadian Pacific, with headquarters at Winnipeg, Man., has been appointed superintendent of the Fort William, Ont., terminals division, succeeding A. F. Hawkins, who retired on pension August 31, after 46 years of service with this road. Mr. Trimble entered the service of the Canadian Pacific at Swift Current, Sask., and eight years later went to Winnipeg as perishable traffic supervisor. He became supervisor of transportation for the Manitoba district in 1943, which position he held until his recent appoint-



W. F. Trimble

ment as superintendent terminals at Fort William.

Mr. Hawkins was born in Kent, England, on August 9, 1885, and attended the public schools and Wesley College. He entered railway service in October, 1903, as yard checker with the Canadian Pacific, later serving as chief car checker and general yardmaster at Fort William. Mr. Hawkins was trainmaster at Medicine Hat, Alta., for six months during 1914 and then terminal trainmaster at Moose Jaw, Sask., for two years. Mr. Hawkins became superintendent of the Fort William terminals division in 1916.

Otto H. Zimmerman, Jr., whose promotion to superintendent, Springfield division, of the Illinois Central, with head-quarters at Clinton, Ill., was reported in Railway Age of August 13, was born on

April 10, 1914, at Champaign, Ill., and attended the University of Illinois for three years. He entered I. C. service in February, 1936, as a switchman, and in December, 1941, became assistant trainmaster at Kankakee, Ill. The following September he was advanced to acting trainmaster at Champaign, being appointed trainmaster at Mattoon, Ill., in



Otto H. Zimmerman, Jr.

1943. He returned to Champaign as trainmaster in April, 1945, and was transferred to Palestine, Ill., two months later. Mr. Zimmerman served as trainmaster at Fort Dodge, Iowa, from July, 1946, to December, 1948, when he became trainmaster at Louisville, Ky., the post he held at the time of his promotion.

Warren E. Kamm, formerly superintendent of the Cleveland division of the New York Central, with headquarters at Cleveland, Ohio, has returned to active duty with the N. Y. C. as assistant to the general manager at that point. Mr. Kamm was serving as superintendent at Cleveland in May, 1947, when he became seriously ill.

The Chicago Burlington & Quincy has announced the following changes: Fred E. Sperry, general superintendent of transportation at Chicago, promoted to assistant vice-president-operations at that point; Harry E. Hinshaw, general superintendent at Galesburg, Ill., advanced to general manager, lines west of Missouri river, with headquarters at Omaha, Neb.; Frank L. Kartheiser, assistant to vice-president-operations Chicago, appointed assistant to president at that point; William S. Kerr, assistant to general manager, lines east of Missouri River, with headquarters at Chicago, appointed executive assistant, and Ernest L. Potarf, division superintendent at McCook, Neb., advanced to assistant to vice-president-operations; William B. Simmons, assistant to general superintendent of transportation, promoted to succeed Mr. Sperry; Ralph L. Clayton, trainmaster at Chicago, appointed to succeed Mr. Kerr; William R. Eble, general superintendent, central district, with headquarters at Burlington, Iowa, transferred to replace Mr. Hinshaw; and Elwood P. Stine, superintendent of the Ottumwa (Iowa)-Creston division, appointed to succeed Mr. Eble.

M. A. Sheahan has been appointed trainmaster of the Illinois Central, with headquarters at Carbondale, Ill., succeeding J. W. Dodge, transferred to Louisville, Ky. Mr. Dodge succeeds O. H. Zimmerman, Jr., whose promotion to superintendent at Clinton, Ill., was reported in Railway Age of August 13.

Jay F. Glover, general manager, northern department, of the Railway Express Agency at St. Paul, Minn., has been appointed general manager of the Chicago department, with headquarters at Chicago, succeeding R. S. Hompshire, who has retired after 47 years of service.

H. J. Haven, road foreman of engines of the Missouri Pacific, with headquarters at St. Louis, Mo., has been promoted to trainmaster, St. Louis Terminal division, with the same headquarters. He succeeds G. W. Booker, who has resigned.

W. F. Davis, assistant superintendent of the New York Central at Chicago, has been promoted to superintendent for the western and west divisions at that point, succeeding the late Frank H. Garner, whose death was reported in the Railway Age of August 27. He has been succeeded by W. G. Chase, assistant superintendent at Charleston, W. Va. W. D. Schreck, assistant to assistant general manager at Indianapolis, Ind., has been advanced to assistant superintendent at Van Wert, Ohio, succeeding D. B. Fleming, transferred to succeed Mr. Chase. W. O. Holderby, trainmaster at Indianapolis, Ind., has been transferred to Bellefontaine, Ohio, and has been succeeded by Douglas Campbell, assistant to vice-president, operations and mainte-nance, with headquarters at New York.

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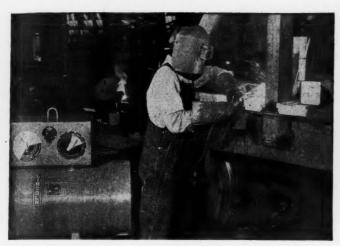
TRAFFIC

Guy B. Wood, vice-president in charge of traffic of the Kansas City Southern, with headquarters at Kansas City, Mo., has voluntarily retired after 50 years of continuous service with the K.C.S. Succeeding Mr. Wood is John W. Scott, western district traffic manager at San Francisco, Cal.

Harry G. Schaeffer, coal freight agent of the Chicago & Eastern Illinois at Chicago, retired on August 31 after nearly 23 years of service with the C. & E. I.

Joseph F. Flynn, general agent of the Norfolk Southern at Cincinnati, Ohio, has been appointed acting general Western freight agent—sales and service, with headquarters at Chicago and Cincinnati, succeeding Malcclm N. Vienne, who has been appointed general Eastern freight agent at New York. J. W. Tumlin, general freight agent at New York, has

HOW ARC WELDING SIMPLIFIES ALTERATIONS ... CUTS CAR MAINTENANCE COSTS



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Fig. 1. Fillet welding braces to upright in the fabrication of a bulkhead for freight car.



Fig. 2. Finished all welded bulkhoad. Cross members are angles; diagonal braces are "!" beams.

By A. T. COX
Vice President, Lincoln Electric Railway Sales Co.
Cleveland, Ohio

ALL types of car repair and alteration jobs are being made easier, completed in less time at less cost with arc welding. By using arc welded construction for special car structures, many previous operations such as laying out and drilling of structural members prior to riveting have now been eliminated. The solid, one-piece construction made possible by arc welding is proving superior to former riveted designs for withstanding severe shock and impact loads of modern railroading.

The altering of flat cars (Fig. 1) for special service to ship plaster board is typical of the many jobs being done

in car shops throughout the country. The end posts or bulkheads are fabricated from angles, "I" beams and channels. Box members for uprights are shop fabricated by butt welding two channels, using the Automatic "Lincolnweld" as shown in Fig. 3. The resulting solid, uniform welds have 100% penetration and are produced in a single pass by welding in a granular flux. In assembly, structural members are aligned and tack welded before finish welding with "Fleetweld 7" electrodes, using Lincoln "Shield-Arc" Motor Driven D. C. Arc Welders.

Another typical maintenance job completed at less cost with arc welding is the reinforcing of roof containers for shipping automobile body stampings (Fig. 5). Stiffeners and corner braces are added to better resist impact loads.



Fig. 3. Fabricating parts such as box sections with Automatic "Lincolnweld." 100% penetration welds are made in one pass at three times the speed of manual welding.



Fig. 4. Finished bulkhead with wood facing bolted to upright members. Solid welded joints will not work loose or start corrosion as in riveted design.



Fig. 5. Strengthening corner braces on containers for hauling automobile roof body stampings. Steel strips added to corner braces prevent buckling under severe loads.

The above is published by THE LINCOLN ELECTRIC COMPANY in the interests of progress.

For further information about arc welding procedures or equipment, write The Lincoln Electric Railway Sales Co., 11 Public Square, Cleveland, Ohio, railroad representatives of The Lincoln Electric Company, Cleveland 1, Ohio

been granted a leave of absence because of ill health.

The Chicago, Indianapolis & Louisville has announced the removal of the office of the general agent at San Francisco, Cal., to Suite 322, Monadnock Building. Effective October 1, the general agent's office at New Orleans, La., will be located in Suite 411-B Pere Marquette building.

W. M. Jamieson, whose promotion to general freight agent, sales and service, Prairie region, of the Canadian Pacific, with headquarters at Winnipeg, Man., was reported in Railway Age of August 27, entered railroad service with that road as a junior clerk in the freight service office at Toronto, Ont. From 1936



W. M. Jamieson

to 1941 he was assistant to the general freight agent at that point and subsequently he became chief of the tariff and division bureau. Mr. Jamieson was advanced to assistant general freight agent at Montreal, Que., in February, 1948, which position he held at the time of his recent promotion.

ENGINEERING &

J. O. Fraker, general electrical and shop engineer of the Texas & Pacific, with headquarters at Dallas, Tex., has been appointed to the newly created position of electrical engineer and Diesel supervisor, with the same headquarters. His former post has been abolished.

MECHANICAL

R. F. Culbreth, master mechanic of the Indiana Harbor Belt, at Gibson, Ind., has been given jurisdiction over the equipment department, including both the locomotive and car departments. A. A. Johnson, general car foreman at Gibson, has been appointed assistant master mechanic at that point. The position of division general car foreman has been abolished.

J. R. Stewart, assistant master mechanic of the New York Central at Niles, Mich., has been appointed general loco-

motive inspector at Detroit. He succeeds E. J. Burck, who has retired after 48 years of service. C. J. Marple has been appointed assistant master mechanic at St. Thomas, Ont.

SPECIAL

R. E. Lorentz and E. T. Horslev. supervisors of personnel of the Illinois Central, with headquarters at Chicago, have been appointed assistant managers of personnel, with the same headquar-

OBITUARY

Thomas P. Healy, general solicitor of the New York Central, with headquarters at New York, died on August 26 in the United hospital, Port Chester, N. Y., after a brief illness, at the age of 56. Mr. Healy was born at Batavia, N. Y., on August 9, 1893, and received his LL.B. degree from Georgetown University in 1917. He was with the Interstate Commerce Commission at Washington, D. C., from 1914 to 1917 and during World War I was with the 32nd Regiment of Engineers, U. S. Army. From 1919 to 1926 Mr. Healy served as attorney-examiner for the I.C.C. at Washington and from 1926 to 1929 as director of the commission's Bureau of Inquiry at Washington. He became general solicitor of the New York Central in 1932.

H. C. McCullough, late superintendent of motive power, second mechanical district of the Chicago, Rock Island & Pacific, with headquarters at El Reno, Okla., whose death was reported in Railway Age of August 27, was born at Dennison, Ohio. He began his railroad career with the Rock Island in July, 1912, at Silvis, Ill., as a locomotive fireman,

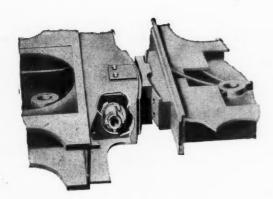
and rose to master mechanic of the Cedar Rapids division in 1938. In February, 1940, he was transferred to the Rock Island division, and three years later became superintendent of motive power, second mechanical district, with headquarters at Kansas City, Mo. Mr. McCullough's headquarters were moved to El Reno in July of this year, at which point he was serving at the time of his death.

William D. Hartley, mechanical superintendent of the Atchison, Topeka & Santa Fe, with headquarters at La Junta, Colo., died on August 10 at Las Vegas, N. M., following a heart attack. Mr. Hartley was born at Albuquerque, N. M., on August 14, 1886, and attended the New Mexico State Normal School at Las Vegas for two years. He entered Santa Fe service in April, 1903, as a machinist helper at Albuquerque and the next year became machinist apprentice at that point. From 1908 to 1914 he served successively as machinist at Albuquerque and roundhouse foreman at Richmond, Cal., subsequently being advanced to division foreman at Barstow, Cal. He returned to Richmond in 1918 as general foreman and was promoted to master mechanic in 1920 at Clovis, N. M., where he remained until his transfer to Raton, N. M., the following year. He was further promoted to mechanical superintendent at La Junta in 1930, and was transferred to Fort Madison, Iowa, in February, 1943. Mr. Hartley became mechanical superintendent at Topeka, Kan., in July, 1943, and was subsequently appointed to the same position at La Junta, where he was serving at the time of his death.

T. N. Stevens, general agent of the Nashville, Chattanooga & St. Louis at Nashville, Tenn., died on August 17 at Savannah, Ga.



The "Twentieth Century Limited" pauses briefly for servicing at about 1 a.m. at the New York Central station at Buffalo, N. Y., on the overnight run from New York to Chicago. Across the platform the "Wolverine," bound from Chicago and Detroit, Mich., to New York makes its scheduled Buffalo stop to receive and discharge passengers



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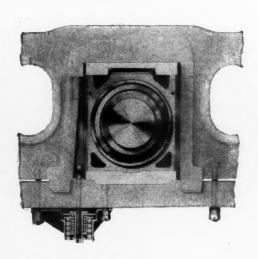
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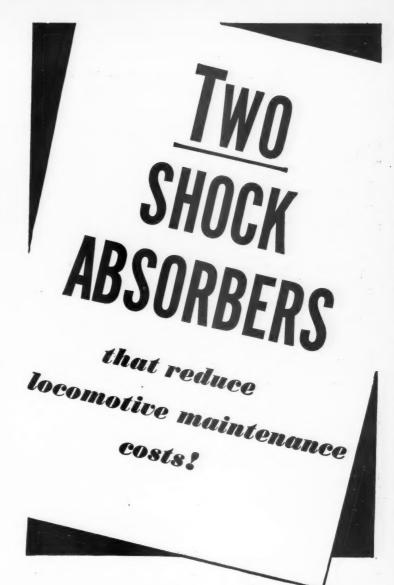
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FRANKLIN E-2 RADIAL BUFFERS

The Franklin E-2 radial buffer reduces maintenance by dampening and absorbing horizontal shake and vertical vibration. This results in less wear on chafing plates, drawbars and pins; fewer pipe failures; less displaced brickwork; and fewer loose cabs. It requires minimum attention and will make any locomotive, at any speed, a better riding engine. Crews appreciate the greater comfort it brings.





FRANKLIN COMPENSATORS AND SNUBBERS

Equally important with roller-bearing or surface-bearing locomotives, the Franklin Compensator and Snubber keeps the driving box, or housing, snug in the pedestal jaw, regardless of expansion or wear. It will absorb unusual thrusts and shocks. Driving box pound is eliminated. Wear, and the possibility of failure, of crank pins and rod bearings are minimized. Tire mileage is extended by reduction of quarter slip.



FRANKLIN RAILWAY SUPPLY COMPANY

NEW YORK . CHICAGO . MONTREAL

STEAM DISTRIBUTION SYSTEM . BOOSTER . RADIAL BUFFER . COMPENSATOR AND SNUBBER . POWER REVERSE GEARS
FIRE DOORS . DRIVING BOX LUBRICATORS . OVERFIRE JETS . JOURNAL BOXES . FLEXIBLE JOINTS . CAR CONNECTION

OPERATING REVENUES AND OPERATING EXPENSES OF CLASS I STEAM RAILWAYS

Compiled from 128 monthly reports of revenues and expenses representing 132 Class I steam railways.

(Switching and Terminal Companies Not Included)

FOR THE MONTH OF JUNE 1949 AND 1948

	United !	States	Eastern I	District	Southern I	District	. Western District 1				
Item	1949	1948	1949	1948	1949	1948	1949	1948			
Miles of road operated at close			#0.100	## COO	45.040	46 101	A: 307.006	100 000			
Revenues:	226,632	227,141	53,488	53,689	46,048	46,131	127,096	127,321			
Freight	\$599,507,471	\$690,837,747	\$218,266,399	\$266,749,595	\$116,771,907	\$142,359,208	\$264,469,165	\$281,728,944			
Passenger	77.076.491	84.251.024	39.117.257	42,054,356	10,680,756	12,172,018	27,278,478	30,024,650			
Mail	17.549.390	15,246,128	6,295,869	5,281,820	3,258,245	2,942,855	7,995,276	7.021.453			
Express	8,194,611	11,077,078	2,094,593	4,640,472	1,129,147	1,471,322	4,970,921	4,965,284			
All other operating revenues	33,111,095	36,693,972	14,626,235	16,419,508	5,465,600	5,926,392	13,019,260	14,348,072			
Railway operating revenues	735,439,108	838,105,949	280,400,353	335,145,751	137,305,655	164,871,795	317,733,100	338,088,403			
Expenses:											
Maintenance of way and structures	122,797,590	122,206,329	43,701,436	46,384,615	23,581,113	24,556,032	55,515.041	51,265,682			
Depreciation	10,609,006	10,382,611	4,428,265	4,416,420	1.886,446	1,805,553	4,294,295	4.160,638			
Retirements	797,188	1,475,400	207,239	590.187	138,176	189,242	451,773	695,971			
Deferred maintenance	*234.877	*267,984		*2,057	*85,845	*43,775	*149,032	*222,152			
Amortization of defense projects	151,575	147,355	15,467	15.049	46.817	42,896	89,291	89,410			
Equalization	*5,982,631	*2.115.317	*3.049.915	*858,519	*1,489,395	*178.281	*1,443,321	*1,078,517			
All other			42,100,380	42,223,535	23,084,914	22,740,397	52,272,035	47,620,332			
All other	117,457,329	112,584,264			28.893,382	29,197,182	53,666,569	50,561,231			
Maintenance of equipment	138,046,277	139,461,144	55,486,326	59,702,731							
Depreciation	23,420,065	20,667,415	9,091,037	8,255,519	5,296,588	4,586,036	9,032,440	7,825,860			
Retirements Deferred maintenance and major	*61,095	*58,256	*6,988	*23,896	*39,759	*17,744	*14,348	*16,616			
repairs	*122,900	*285,154	*51.866		*5,353	*126,094	*65,681	*159,060			
Amortization of defense projects	1.221,422	1,224,323	450,911	452,386	238,288	238,926	532,223	533,011			
Equalization	*120,325	328,886	*34,908	59,243	53,924	301.122	*139.341	*31.479			
All other	113,709,110	117.583,930	46,038,140	50,959,479	23,349,694	24,214,936	44,321,276	42,409,515			
Traffic	16.270.320	15,952,029	5,576,298	5,636,198	3,421,861	3,411,562	7,272,161	6,904,269			
Transportation—Rail line	278,753,787	314.888.820	117,367,495	131,757,002	50,005,032	58,016,063	111,381,260	125,115,755			
Miscellaneous operations	9,499,943	10,907,356	3,452,592	4,146,508	1,258,873	1,492,153	4.788,478	5,268,695			
General	22,809,476	22,674,134	8,803,246	8,589,535	4,989,322	4,957,082	9,016,908	9,127,517			
						101 620 074	941 640 412				
Railway operating expenses	588,177,393	626,089,812	234,387,393	256,216,589	112,149,583	121,630,074	241,640,417	248,243,149			
Net revenue from railway operations	147,261,715	212.016.137	46.012,960	78,929,162	25,156,072	43,241,721	76,092,683	89,845,254			
Railway tax accruals	72,407,446	72,687,139	23,358,039	21,882,184	14.968.885	18,492,979	34,080,522	32.311.976			
Pay-roll taxes	21,884,705	*7.896.885	8,897,990	*6.591.247	4.217.073	75,874	8,769,642	*1,381,512			
Federal income taxes	23,749,205	52,253,435	4.472,658	16,816,225	5,631,549	12,875,602	13,644,998	22,561,608			
All other taxes.			9,987,391	11.657.206	5,120,263	5,541,503	11,665,882	11,131,880			
All other taxes	26,773,536	28,330,589	9,961,391	11,037,200	3,120,203	3,341,303	11,000,002	11,131,000			
Railway operating income	74,854,269	139,328,998	22,654,921	57,046,978	10,187,187	24,748,742	42,012,161	57,533,278			
Equipment rents-Dr. balance	10,537,832	11,341,273	4,700,338	5,137,291	*1,715,348	*1,822,563	7,552,842	6,026,545			
Joint facility rent-Dr. balance	3,053,158	3,014,862	1,523,745	1,411,598	451,918	451,479	1,077,495	1,151,785			
Net railway operating income.	61,263,279	124,972,863	16,430,838	50,498,089	11,450,617	26,119,826	33,381,824	48,354,948			
Ratio of expenses to revenue (percent)	80.0	74.7	83.6	76.4	81.7	73.8	76.1	73.4			
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FOR THE SIX MONTHS ENDED WITH JUNE 1949 AND 1948

	United	States	Eastern	District	Southern 1	District	Western District			
Item	1949	1948	1949	1948	1949	1948	1949	1948		
Miles of road operated at close	APEZ	1710	.,.,					.,		
of month	226,666	227,203	53,490	53,697	46.043	46.157	127,133	127,349		
Revenues:		,								
Freight	\$3,605,729,655	\$3,804,798,713	\$1,385,555,866	\$1,467,446,843	\$754,733,980	\$802,629,098	\$1,465.439,809	\$1,534,722,772		
Passenger	430,098,675	452,887,917	223,818,704	229,332,473	71.045,377	74,370,280	135,234,594	149,185,164		
Mail	108,188,062	91,411,221	39,425,335	32,377,048	19,791,186	16,762,143	48,971,541	42,272,030		
Express.		59,535,732	9,675,661	20,274,904	6,890,655	10,703,711	20,081,456	28,557,117		
All other operating revenues	188,596,575	198,085,673	84,442,798	88.256,665	32,300,370	33,661,194	71,853,407	76,167,814		
Railway operating revenues	4,369,260,739	4,606,719,256	1,742,918,364	1,837,687,933	884,761,568	938,126,426	1.741.580.807	1.830,904.897		
Expenses:	Nonsimonius	1,000,120,000	2,122,22,001	.,00.,100.,120.	,,	,,	.,,,	.,,,		
Maintenance of way and structures	661,162,826	644,706,776	236,989,464	235,869,568	134,923,667	136,795,735	289,249,695	272,041,473		
Depreciation	63,452,539	61,981,790	26,655,970	26,332,900	11,147,487	10,762,021	25,649,082	24,886,869		
Retirements	4,863,005	5,535,597	1,449,004	1,508,687	781,174	622,133	2,632,827	3,404,777		
Deferred maintenance	*1,472,044	*2,207,366	*328,422	*68,240	*376,480	*732,116	*767.142	*1,407,010		
Amortization of defense projects	895,555	1,125,195	92,270	77,379	284.164	261,850	519,121	785,966		
Equalization	*3,578,619	4,050,683	*1.715,141	2,329,429	676,569	1,631,050	*2,540,047	90,204		
All other	597,002,390	574,220,877	210.835,783	205,689,413	122,410,753	124,250,797	263,755,854	244,280,667		
Mainter.					170,379,995		324,447,612	307,954,826		
Maintenance of equipment	838,748,960	830,211,582	343,921,353	354,436,426		167,820.330				
Depreciation	136,178,732	121,694,726	52,648,232	48,020,019	30,594,623	27,016,464	52,935,877	46,658,243		
Retirements Deferred maintenance and major	*392,059	*664,944	*72,636	*68,995	*102,687	*130,297	*216,736	*465,652		
repairs	*799.531	*2,185,309	*399,616		*193.164	*622,237	*206,751	*1,563,072		
Amortization of defense projects	7,331,766	7,398,906	2,705,768	2.712.935	1,432,700	1,433,737	3,193,298	3,252,236		
Equalization	1.061.755	2,378,309	*28,714	477,073	1.142,361	1,964,027	*51,892	*62,791		
All other	695,368,297	701,589,892	289,068,319	303,295,394	137,506,162	138,158,636	268,793,816	260,135,862		
	98,809,445	95,209,816	33,668,915	32,253,297	20,854,624	21,055,828	44,2: 5,906	41,900,691		
Traffic.							688,317,703			
Transportation—Rail line	1,757,321,919	1,880,179,666	742,996,270	803,296,620	326,007,946	352,192,857		724,690,189		
Miscellaneous operations	59,777,312	64,148,789	22,503,411	24,489,906	9,260,996	9,969,985	28,012,905	29,688,898		
General	139,459,271	134,460,463	54,054,016	51,437,884	29,754,128	29,266,171	55,651,127	53,756,408		
Railway operating expenses	3,555,279,733	3,648,917,092	1,434,133,429	1,501,783,701	691,181,356	717.100,906	1,429,964,948	1,430,032,485		
Net revenue from railway operations	813,981,006	957,802,164	308,784,935	335,904,232	193,580,212	221,025,520	311,615,859	400,872,412		
Railway tax accruals	421,165,073	461,202,053	154,801,172	164,996,631	100,030,093	111,124,103	166,333,808	185,081,319		
Pay-roll taxes	129,147,636	134,955,071	53,113,141	55,791,465	25,035,507	28,358,586	50,998,988	50,805,020		
Federal income taxes†	130,903,621	171,903,229	41,605,306	50,525,198	41.834.038	50.500.651	47,464,277	70,877,380		
All other taxes	161,113,816	154,343,753	60,082,725	58,679,968	33,160,548	32,264,866	67,870,543	63,398,919		
Railway operating income	392,815,933	496,600,111	153,983,763	170,907,601	93,550,119	109,901,417	145,282,051	215,791,093		
Equipment rents—Dr. balance	60.835,196	65,610,421	28,633,079	31,416,979	*3,813,604	*5,509,890	36,015,721	39,703,332		
Joint facility rent-Dr. balance	19,290,009	20,056,970	9,122,140	9,539,768	2,968,342	3,027,627	7,199,527	7,489,575		
Net railway operating income.	312,690,728	410,932,720	116,228,544	129,950,854	94,395,381	112,383,680	102,066,803	168,598,186		
Ratio of expenses to revenues (percent)	81.4	79.2	82.3	81.7	78.1	76.4	82.1	78.1		

[†] Includes income tax and surtax.

* Decrease, deficit, or other reverse item.

Compiled by the Bureau of Transport Economics, Interstate Commerce Commission. Subject to revision.



Railroads all over America stretch maintenance dollars

with PRESSURE GROUTING

FROM COAST to coast leading railroads are stretching maintenance dollars by stabilizing their track with portland cement grout. Pressure grouting ends troublesome water pockets and soft spots, stabilizes fills, lengthens rail and tie life and increases the load-carrying capacity of the treated sections.

Pressure grouting has proved its worth under all types of traffic and subgrade conditions throughout the country. Many of the more than 50 railroads that have tried this method of roadbed stabilization are employing it as routine maintenance practice—and earning returns up to several hundred per cent of the original investment.

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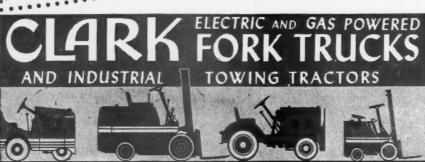
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GENERAL NEWS

(Continued from page 76)

Senator O'Conor Would Separate Subsidies from Air-Mail Costs

"To clarify the atmosphere with respect to proposed revisions in postal rates, and in the interests of good business practices, air subsidy payments should be completely separated from airmail costs, and should not be saddled upon the Post Office Department," Senator O'Conor, Democrat of Maryland, said in an August 29 statement. He suggested that "everyone interested in businesslike functioning of the government" will approve the "objectives" of S.1431, a bill to provide for the separation, which is now pending before the Senate committee on interstate and foreign commerce.

"Amid the controversy now raging over the question of increased postal rates to make the Post Office Department selfsupporting," the senator continued, "it is only simple justice that the atmosphere be cleared so that the deficit which it is sought to eliminate or reduce by higher postal rates may actually be only the amount occasioned by actual postal operations." Senator O'Conor also recalled that the so-called Hoover Commission recommended that the amounts of these subsidies "should be paid to the Post Office by open appropriations from tax funds and not imposed upon the Post Office or mail users in this hidden manner."

Seven Months' Net Income Down \$136 Million

Class I railroads in the first seven months of this year had an estimated net income, after interest and rentals, of \$200 million as compared with \$336 million in the corresponding period of 1948, according to the Bureau of Railway Economics of the Association of American Railroads. The 7-months net railway operating income, before interest and rentals, was \$363,480,730 as compared with \$516,189,527 in the same period of 1948.

Estimated results for July showed a net income of \$27,200,000 as compared with \$76,700,000 in July, 1948, while the net railway operating income for the 1949 month was \$50,337,002 as compared with \$105,256,808 for July, 1948. In the 12 months ended with July, the rate of return averaged 3.6 per cent as compared with 3.78 per cent for the 12 months ended with July, 1948.

House Passes Bill Authorizing Survey for Railroad to Alaska

The House has passed a bill which proposes to authorize President Truman to enter an agreement with Canada "for a location survey for a railroad of standard gage to connect the existing railroad system now terminating at Prince George, B. C., with the railroad system serving the territory of Alaska and terminating at Fairbanks." The bill,



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Road service, however, soon showed that Security Circulators also greatly improve the performance of a locomotive and reduce maintenance cost on both flues and arches.

Since then installations of thousands of Security Circulators have been made by fifty railroads in twenty-five different types of locomotives. These installations have definitely stepped up the earning ability of the locomotives, through increased efficiency of operation and greater availability.

Recently the American Arch Company has also developed the Security Dutch Oven to increase the efficiency of combustion in oil-burning steam motive power.

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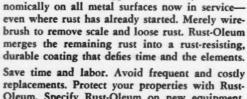
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H.R.2186, is sponsored by Representative Jackson, Democrat of Washington, who told the House that the proposed survey would be for a "1,400-mi. railroad."

"Heretofore," Mr. Jackson also said, "only one survey of this kind has been made-by the Corps of Army Engineers in 1942. However, this survey considered only the military feasibility of such a railroad. An up-to-date survey of the economic feasibility will require a care ful examination of all of the resourceof the territory, and of the economic benefits to be derived from an investmenin such a railroad."

As originally introduced, the bill would have authorized the President to include, in any agreement he might enter with Canada, provisions for the "construction" as well as the "location survey" of the proposed line. In reporting the measure to the House, that body's committee on foreign relations proposed amendments to limit the authorization to the "location survey"; and those amendments were adopted by the House before it acted favorably on the bill.

Transcontinental Bus System To Add Southern Bus Lines

Division 4 of the Interstate Commerce Commission has authorized the Transcontinental Bus System to acquire control of Southern Bus Lines through purchase of all of its outstanding stock at a cost of approximately \$3,803,000.

Transcontinental commenced operations in March, 1948, taking over several bus companies and the bus operations of the Sante Fe Trail Transportation Company, subsidiary of the Atchison, Topeka & Santa Fe. Transcontinental's present system extends generally west of Chicago, and south of St. Joseph, Mo., Lincoln, Neb., Denver, Colo., and Salt Lake City, Utah, over routes extending to points on the Gulf coast of Texas and El Paso, and via Flagstaff, Ariz., and San Bernardino, Cal., to certain points on the Pacific coast between San Diego, Cal.. and Seattle, Wash., including Los Angeles and San Francisco. It is a member of National Trailways Bus System.

Southern operates over a network of regular routes in Alabama Arkansas. Illinois, Kentucky, Louisiana, Mississippi. Missouri, Tennessee, and Texas and it is also a member of the National Trailways. The routes of the Southern, the report said, are complementary to those of Transcontinental and connect with the latter principally at St. Louis, Mo., Texarkana, Ark, Shreveport, La., Beaumont, Tex., and Orange, Tex. Through service is now in effect from Dallas Tex., to Los Angeles, Cal., via Transcontinental; from Dallas to New Orleans, La., via Transcontinental and Southern; and between Dallas and Birmingham, Ala., via Shreveport. According to the report, another through bus service in conjunction with three other Trailways' carriers extends between Dallas and Raleigh, N. C., and other Trailways' carriers handle the traffic between Raleigh and New York.

The report also authorizes the Transcontinental to issue an unsecured promis-



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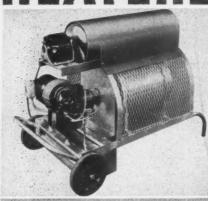
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CAR PREHEATER CUTS SHIPPING LOSSES The flies of a switch

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The new Silent Glow portable heater has proved its efficiency in car preheating for the potato growers in Maine. Preheating in a fraction of the time — combines radiant heating for sidewalls and bottom of cars, and forced air heating for circulation — no smoke, no soot, no charring of the cars — SAFE heat — no carbon monoxide — all adds up to LESS SHIPPING LOSSES — LESS TIME LOSS — NO CAR DAMAGE.

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sory note for \$1,500,000, the proceeds of which will be applied to finance the transaction, and to assume obligation for payment of \$2,228,000 of promissory notes of the Bus Investment Corporation, which owns the stock of Southern. This corporation, the report said, was organized by Morgan W. Walker, president of Southern, "solely for the purpose of purchasing Southern's stock from its former owner, Continental Motor Coach Lines of Newark, N. J." As the report put it, Walker "offered to purchase the stock and sell it to Transcontinental when the latter, subject to the commission's approval, would be in a position to purchase it."

The report added that "the primary consideration prompting the proposed transaction appears to be the preservation of the integrity of Trailways' organization in the south, as an effective means of enabling the individual members to compete with the Greyhound system."

Higher Panama Canal Tolls Postponed Until April 1, 1950

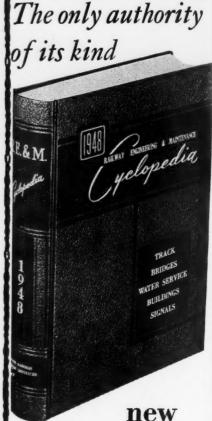
President Truman has further postponed, from September 1 until April 1, 1950, the effective date of his outstanding proclamation which orders an increase in Panama Canal toll rates. The proclamation was issued March 26, 1948, and the toll-rate increases were originally scheduled to become effective October 1, 1948.

They would raise the toll on merchant vessels, when carrying cargo, from 90 cents to \$1 "per net vessel ton of 100 cubic feet—that is, the net tonnage determined in accordance with the Rules for Measurement of Vessels for the Panama Canal." On vessels in ballast, without passengers or cargo, the rate would go up from 72 to 80 cents per vessel-ton.

Technicolor Movie on Rock Island in Preparation

Filming of a new full-length feature motion picture in technicolor, "Rock Island Trail," giving the story of the building of the Chicago, Rock Island & Pacific is expected to begin early this month on location near McAlester and Haileyville, Okla., by Republic Productions, Inc. The railroad announces that eight flatcars loaded with historic equipment of the Civil War period have already been dispatched from Chicago to the shooting location.

Although the first stretch of the railroad was laid between Chicago and Joliet in 1852, the Oklahoma location was selected because it offered natural and unobstructed scenery typical of the territory served by the Rock Island. The movie is based on a novel entitled "A Yankee Dared" by F. J. Nevins, with the addition of a love story plot. Climax of the film will be the appearance of young Abraham Lincoln in the law courts to defend the first railroad bridge across the Mississippi, built by the Rock Island. World premiere of the film is expected early in 1950 at Rock Island, Ill.



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